

ANNUAL REPORT
OF THE
PUBLIC WORKS DEPARTMENT



OF THE
CITY OF BOSTON
1929

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1929



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JAMES H. SULLIVAN

Commissioner of Public Works

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ANNUAL REPORT
OF THE
PUBLIC WORKS DEPARTMENT
FOR THE
YEAR 1929



CITY OF BOSTON
PRINTING DEPARTMENT
1930

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ANNUAL REPORT
OF THE
PUBLIC WORKS DEPARTMENT
FOR THE
YEAR ENDING DECEMBER 31, 1929.

BOSTON, January 2, 1930.

HON. MALCOLM E. NICHOLS,
Mayor of Boston.

DEAR SIR,— In compliance with the Revised Ordinances, the annual report of the operations and expenses of the Public Works Department for the year ending December 31, 1929, is respectfully submitted. The Public Works Department, created by Ordinances 1910, chapter 9, now chapter 27 of the Revised Ordinances of 1925, was formed by consolidating the Engineering, Water and Street Departments.

ORGANIZATION.

The department is composed of six main divisions, viz.:

Central Office.— The Central Office is composed of the accounting force of the entire department under the charge of the secretary and chief clerk.

Bridge and Ferry Division.—This division, under a division engineer, has the charge and care of all bridges used as highways which are in whole, or in part, under the control of the city; the care and management of the ferries owned by the city, including boats, slips, drops and buildings.

NOTE.—The Boston and Cambridge Division, so called, is not, strictly speaking, a division of the Public Works Department, as this work is in charge of a committee of two, one member appointed by the Mayor of Boston and the other by the Mayor of Cambridge, under the provisions of chapter 412 of the Acts of 1904; but because of the fact that the present Commissioner of Public Works is the Boston member of this commission and also because one half of the expense of this commission is defrayed by the Bridge Service, it is in this report treated as a division of this department.

Highway Division.—This division, under a division engineer, has the care of the construction, reconstruction and maintenance of roadways and sidewalks, and the care of lamps and the lighting of streets, parks and alleys.

Sanitary Division.—This division, under a division engineer, has charge of the collection and removal of ashes, garbage and refuse, street cleaning and the oiling and flushing of streets.

Sewer Division.—This division, under a division engineer, has charge of the construction of sewers, catch-basins and waterways.

Water Division.—This division, under a division engineer, has the care of water pipes, installation of meters, water service, laying and relaying of water mains and the high pressure fire service.

GENERAL.

The contract for the new Congress Street Bridge over Fort Point Channel was awarded to Coleman

Brothers, Inc., for \$750,000. The new structure of steel and stone, with a 75-foot draw, replaces the old wooden bridge built sixty years ago. The work is well under way, and will be completed in the fall of 1930.

The Chelsea North Bridge is very old and should have immediate attention. It connects with the main artery to the North Shore, and supports an intense traffic which was not contemplated seventy years ago. A wider and more modern structure is necessary, to provide for the ever increasing traffic to and from the city.

The wooden ferryboats "Noddle Island" and "General Sumner" having been condemned by the Government inspectors, reduces the equipment to five steel boats, which are not sufficient to care for the traffic to and from East Boston. It is very necessary that two new steel boats be provided to give the service demanded. An appropriation is recommended in order that contracts may be awarded without delay, giving the Ferry Service a full complement of steel boats.

The Highway Division department forces resurfaced many streets throughout the city, and in addition, the following streets were reconstructed by contract:

C street, Fargo street to First street, recut granite blocks on concrete base with cement grout joints.

D street, Claflin street to First street, recut granite on concrete base with cement grout joints.

Sumner street, East Boston, New street to Orleans street, recut granite blocks on concrete base with cement grout joints.

Brattle and Pitts streets, city proper, recut granite blocks on concrete base with cement grout joints.

The following streets were rebuilt with asphalt or bitulithic:

Harrison avenue, Bedford to Essex street.

Hemenway street.

Westland avenue.

Morton street, Canterbury street to Norfolk street.

River street, Washington street to Duxbury road.
Cummins Highway.

Washington street, Brighton, Monastery road to Brookline line.

There were sixty-four streets laid out by the Street Commissioners completed during the year.

White way lighting was installed at the North Station, on Nashua and Causeway streets.

Twenty-one twin fixtures were installed in Copley square, 3,000 candle power each, and new lamps and fixtures were installed on Massachusetts avenue, city proper, and on Rutherford avenue in Charlestown.

Street signs and posts have been located throughout the city and suburbs. The city proper and Roxbury are practically completed, and in other sections the main or thoroughfare streets have been marked. To date, there are 5,056 new enameled signs erected, and a continuation of the street sign campaign should follow until the entire city is marked with the enameled signs.

The equipment of the Sanitary Service has been reinforced by the addition of two pick-up motor sweeping machines and two side-loading garbage trucks and also a number of two and three ton trucks.

Repairs have been made at the Fort Hill Wharf and South street, Dorchester, garbage stations.

A very important sewerage project, the Savin Hill marginal conduit, was started,—the first section between Dorchester avenue and the New York, New Haven & Hartford Railroad, and the second section in the Savin Hill Playground. This conduit will intercept the Kimball street and the Dorchester avenue storm water overflows, conducting the sewage and storm water to the bay outside the State boulevard, thereby preventing further pollution of Savin Hill Beach.

The West Roxbury sewer, to provide drainage for the Weld street and Church street areas, is in progress and will be completed during the coming season.

About 20.37 miles of new sewers were built.

The Water Service relocated and extended the pipe tunnel under Fort Point channel in anticipation of the new Congress Street Bridge construction.

Many contracts were made for the laying and relaying of water mains, especially in the new lay-outs by the Board of Street Commissioners.

APPROPRIATIONS.

The money assigned for the maintenance work of the Public Works Department during the year 1929 was derived from the income of the city raised by taxation. In December, 1928, the department estimates were submitted to the Mayor, in segregated form, who made such allowance for each item in the budget as he considered necessary and submitted them to the City Council. The total maintenance appropriations, as passed by the City Council and approved by the Mayor, are shown below. On another page will be found the total expenditures by each service for each item in the segregated budget.

Central Office	.	.	.	.	.	.	.	\$90,856 73
Bridge Service	.	.	.	.	.	.	.	472,630 19
Ferry Service ..	.	.	.	.	.	.	.	564,238 20
Lighting Service	.	.	.	.	.	.	.	1,014,428 00
Paving Service	.	.	.	.	.	.	.	1,938,343 28
Sanitary Service	.	.	.	.	.	.	.	3,199,828 79
Sewer Service	.	.	.	.	.	.	.	722,185 08
Water Service	.	.	.	.	.	.	.	1,690,711 23
<hr/>								
Total	.	.	.	.	.	.	.	<u>\$9,693,221 50</u>

Yours respectfully,

JAMES H. SULLIVAN,
Commissioner of Public Works.

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1929,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
A. PERSONAL SERVICE AS PER SCHEDULE A:			
1. Permanent employees	\$84,945 69	\$339,123 25	\$351,067 05
2. Temporary employees		18,094 44	21,407 84
3. Unassigned.....		9,636 21	9,864 84
B. SERVICE OTHER THAN PERSONAL:			
1. Printing and binding	474 15		340 00
3. Advertising and posting			333 78
4. Transportation of persons.....	38 07	653 95	154 13
5. Cartage and freight		2 28	253 36
6. Hire of teams and auto trucks.....		3 00	2,817 00
8. Light, heat and power.....		11,452 35	10,046 05
10. Rent, taxes and water.....		332 76	
12. Bond and insurance premiums.....	10 00		171 92
13. Communication.....	40 02	331 32	313 94
14. Motor vehicle repairs and care.....	459 68	2,104 31	
15. Motorless vehicle repairs.....			
16. Care of animals.....			
18. Cleaning.....		14 80	27 00
19. Removal of ashes, dirt and garbage.....			
20. Disposal of ashes, dirt and garbage.....			
21. Removal of snow.....			
28. Expert.....			
35. Fees, service of venires, etc.....	11 00	40 38	25 00
37. Photographic and blueprinting.....			
39. General plant.....	174 45	31,934 81	63,371 97
42. Repairing streets, etc.....			
C. EQUIPMENT:			
2. Machinery.....			
3. Electrical.....			
4. Motor vehicles.....	36 17	8,105 83	
5. Motorless vehicles.....			

Several Services by Items of the Segregated Budget.
to December 31, 1929.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
\$5,833 33	\$1,132,078 12	\$1,710,750 82	\$431,855 69	\$923,067 78	\$4,978,721 73
.....	79,471 04	38,633 33	10,030 38	32,430 99	200,068 02
.....	71,871 65	180,456 27	19,815 10	33,928 27	325,572 34
.....	.....	330 00	24 60	57 30	1,226 05
.....	73 70	50 25	68 25	198 25	724 23
35 00	1,222 32	4 60	1,351 86	7,934 02	11,393 95
.....	17 14	14 61	11 09	45 51	343 99
.....	6,511 40	49,993 48	1,870 00	20 00	61,214 88
991,370 74	2,839 08	4,771 96	34,832 42	5,821 86	1,061,134 46
.....	5,375 54	1,980 00	1,304 29	599 67	9,592 26
.....	18 00	5 00	.....	65 00	269 92
.....	2,234 62	1,537 14	777 22	2,121 37	7,355 63
132 68	30,526 44	113,881 02	15,352 04	15,798 68	178,254 85
.....	579 30	24,351 63	21 70	31 05	24,983 68
.....	3,989 86	6,798 89	388 15	470 45	11,647 35
.....	178 20	277 70	67,517 01	59 23	68,073 94
.....	.....	397,675 65	.....	.....	397,675 65
.....	343 12	346,511 51	155 50	140 77	347,150 90
.....	195,411 31	.....	.....	.....	195,411 31
.....	.....	.....	.....	684 80	684 80
3 00	797 50	876 00	216 00	1,336 90	3,305 78
.....	93 00	1 00	.....	174 75	268 75
10,571 76	23,201 39	30,658 93	24,884 53	156,075 24	340,873 08
.....	14,469 20	.....	1,550 17	67,312 76	83,332 13
.....	13,900 00	.....	.....	.....	13,900 00
.....	.....	.....	.....	12 05	12 05
24 10	26,103 99	70,083 24	15,005 28	30,408 93	149,767 54
.....	.....	935 00	.....	.....	935 00

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1929,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
C. EQUIPMENT:			
6. Stable.....			
7. Furniture and fittings.....		\$38 00	\$50 00
9. Office.....	\$88 00	24 01	
11. Marine.....			832 99
13. Tools and instruments.....		1,998 03	1,976 22
14. Live stock.....			
16. Wearing apparel.....		40 50	61 87
17. General plant.....		190 69	142 50
D. SUPPLIES:			
1. Office.....	2,826 61	1,694 54	1,331 99
2. Food and ice.....		94 58	55 40
3. Fuel.....		2,471 65	65,363 71
4. Forage and animal.....			
8. Laundry, cleaning, toilet.....		136 81	152 05
11. Motor vehicle.....	310 09	1,657 86	
13. Chemicals and disinfectants.....		6 40	385 36
16. General plant.....		1,192 52	4,060 90
E. MATERIALS:			
1. Building.....		126 52	299 21
2. Highway.....			
3. Bridges.....		33,253 45	
4. Ferries.....			9,847 74
5. Sewer.....			
6. Water.....			
9. Machinery.....		506 38	
10. Electrical.....		842 20	1,324 18
13. General plant.....		24 71	
F. SPECIAL ITEMS:			
2. Damages.....			
7. Pensions and annuities.....		3,833 60	7,709 35
11. Workingmen's compensation.....		342 57	957 00
Totals.....	\$89,413 93	\$470,304 71	\$554,744 35

Several Services by Items of the Segregated Budget.—Concluded.
to December 31, 1929.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
.....	\$254 00	\$596 40	.....	\$32 55	\$882 95
.....	23 85	93 65	.....	4,003 71	4,209 21
.....	200 00	111 17	\$10 95	424 76	858 89
.....	.....	.....	.....	.....	832 99
.....	15,146 13	11,986 88	3,228 53	39,226 93	73,562 72
.....	.....	2,800 00	.....	.....	2,800 00
.....	30 00	128 21	1,256 65	64 80	1,582 03
\$2,244 61	303 58	1,847 06	3,792 49	157 25	8,678 18
199 30	7,296 88	3,880 42	3,110 37	9,830 28	30,170 39
.....	138 13	119 10	149 80	66 28	623 29
.....	13,057 76	3,824 73	44,722 41	1,349 55	130,789 81
.....	12,416 68	57,778 04	1,160 06	2,284 79	73,639 57
.....	75 91	45 80	260 51	118 74	789 82
98 49	18,450 79	55,765 43	5,551 75	10,374 53	92,208 94
.....	157 76	231 33	162 69	109 00	1,052 54
.....	4,383 05	774 12	3,148 23	4,461 95	18,020 77
.....	1,934 54	11 25	2,622 45	274 28	5,268 25
.....	215,612 06	23,141 19	.....	.....	238,753 25
.....	.....	.....	.....	.....	33,253 45
.....	.....	.....	.....	.....	9,847 74
.....	.....	.....	10,791 85	.....	10,791 85
.....	.....	.....	.....	207,700 67	207,700 67
.....	.....	.....	.....	.....	506 38
.....	91 69	144 95	919 81	664 44	3,987 47
.....	10,665 03	52,583 75	4,920 69	2,840 39	71,034 57
.....	.....	.....	.....	8,322 94	8,322 94
.....	13,189 34	10,979 60	2,176 00	12,855 31	50,743 20
.....	5,649 54	14,393 51	1,622 01	1,175 84	24,140 47
\$1,010,513 01	\$1,930,382 64	\$3,221,814 62	\$716,638 53	\$1,585,134 62	\$9,578,946 41

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1929,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
Commissioner.....	\$9,000 00		
Division engineers.....		\$3,750 00	\$1,333 33
Engineers in charge.....			
Clerks and stenographers.....	62,517 18	3,720 68	1,601 12
Address printer.....			
Blueprinters.....	3,446 14		
Chauffeurs.....	1,723 50	4,839 56	
Cement testers.....	5,258 87		
Chief inspectors.....			
Chemist and assistant.....			
Cashiers.....			2,358 99
Captains.....			31,114 82
Constables.....			
Deckhands.....			38,953 03
Drawtenders.....		224,081 80	
Draughtsman.....		6,918 73	
Engineers, assistant and civil.....		14,557 43	30,650 67
Engineers (steam).....			
Electricians.....		2,034 50	2,126 50
Emergency men.....			
Foremen, general.....			3,458 91
Foremen.....		2,459 11	
Subforemen.....		5,324 01	
Instrumentmen.....		6,263 04	
Investigator.....			
Rodmen.....		1,018 92	
Inspectors.....		4,976 35	
Inspector, property.....	3,000 00		
Laborers, janitors, teamsters, watchmen, stablemen, etc.....		19,542 17	29,228 77
Mechanics.....		35,976 40	43,613 38
Meter readers.....			
Medical inspectors.....		200 00	100 00
Oilers, firemen.....			92,974 40
Quartermasters.....			23,899 00
Sewer gatemen, cleaners, etc.....			

Several Services by Items of the Segregated Budget.
to December 31, 1929.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
					\$9,000 00
\$1,333 33	\$3,750 00		\$5,084 92	\$5,083 33	20,334 91
	844 79			3,958 33	4,803 12
2,400 00	38,076 99	\$5,583 93	10,725 99	95,336 25	219,962 14
				1,863 47	1,863 47
					3,446 14
	64,539 88	159,088 23	30,205 52	24,216 46	284,613 15
	480 36				5,739 23
	964 69			2,358 99	3,323 68
	573 89				573 89
					2,358 99
					31,114 82
		1,401 51			1,401 51
					38,953 03
					224,081 80
	985 21		7,353 96	4,435 51	19,693 41
	8,108 91	2,859 04	14,434 27	14,351 23	84,961 55
	24,043 74		11,606 00		35,649 74
					4,161 00
				51,328 00	51,328 00
	3,176 70			2,795 92	9,431 53
	27,215 85	57,360 86	8,297 72	26,514 85	121,848 39
	41,415 52			2,058 86	48,798 39
	8,997 21		15,605 63	12,600 00	43,465 88
				2,158 77	2,158 77
	1,247 63				2,266 55
2,100 00	50,020 84	158,362 34	42,279 94	44,547 67	302,287 14
					3,000 00
	607,589 90	1,202,339 48	121,254 57	189,314 38	2,169,269 27
	231,903 63	99,967 44	49,555 00	360,964 33	821,980 18
				66,803 86	66,803 86
	400 00	2,200 00	100 00	600 00	3,600 00
	3,859 50		69,781 84		166,615 74
					23,899 00
			37,599 38		37,599 38

**Expenditures Under the Maintenance Appropriation of the
From January 1, 1929,**

GROUP AND ITEM.	Central.	Bridge.	Ferry.
Supervisors		\$3,460 55	.....
Supervisors, deputy .....			.....
Storekeepers			\$1,800 00
Superintendent and deputy .....			.....
Telephone operators .....			.....
Tollmen and gatemen			47,854 13
Veterinarian .....			.....
Wharfingers .....			.....
Weighers .....			.....
Yardmasters .....			.....
Yardmen .....			.....
Permanent (totals)	\$84,945 69	\$339,123 25	\$351,067 05
Temporary		18,094 44	21,407 84
Unassigned		9,636 21	9,864 84
Totals	\$84,945 69	\$366,853 90	\$382,339 73

Several Services by Items of the Segregated Budget.—Concluded.
to December 31, 1929.

Lighting.	Paving.	Sanitary.	Sewer.	Water.	Totals.
.....	.....	\$4,000 00	.....	.....	\$7,460 55
.....	.....	3,500 00	.....	.....	3,500 00
.....	.....	1,800 00	.....	\$1,799 99	5,399 99
.....	\$7,674 44	.....	\$3,558 81	6,558 33	17,791 58
.....	.....	1,500 00	.....	1,304 17	2,804 17
.....	.....	.....	.....	.....	47,854 13
.....	500 00	2,250 00	125 00	125 00	3,000 00
.....	.....	1,679 05	.....	.....	1,679 05
.....	1,858 94	1,800 00	.....	.....	3,658 94
.....	.....	1,858 94	.....	.....	1,858 94
.....	3,849 50	3,200 00	4,284 14	1,990 08	13,323 72
\$5,833 33	\$1,132,078 12	\$1,710,750 82	\$431,852 69	\$923,067 78	\$4,978,718 73
.....	79,471 04	38,633 33	10,030 38	32,430 99	200,068 02
.....	71,871 65	180,456 27	19,818 10	33,928 27	325,575 34
\$5,833 33	\$1,283,420 81	\$1,929,840 42	\$461,701 17	\$989,427 04	\$5,504,362 09

The expenditures under the several appropriations for the different services for the year 1929 were as follows:

DIVISIONS AND SERVICES.	Current Expenses.	Special Appropriations.	Total Expenditures.	Balance December 31, 1929.
Central Office.....	\$89,413 93	.....	\$89,413 93	.....
Bridge Service.....	470,304 71	\$280,613 54	750,918 25	¹ \$763,535 06
Ferry Service.....	554,744 35	23,182 55	577,926 90	² 122,035 04
Lighting Service.....	1,010,513 01	.....	1,010,513 01	.....
Paving Service.....	1,930,382 64	1,918,235 08	3,848,617 72	82,940 40
Sanitary Service.....	3,221,814 62	.....	3,221,814 62	.....
Sewer Service.....	716,638 53	1,296,499 86	2,013,138 39	³ 963,089 40
Water Service.....	1,585,134 62	87,031 78	1,672,166 40	4,202 13
Totals.....	\$9,578,946 41	\$3,605,562 81	\$13,184,509 22	\$1,935,802 03

¹ \$410,000 authorized, but not issued, included.

² \$50,000 authorized, but not issued, included.

³ \$640,000 authorized, but not issued, included.

Cost of Maintenance of the Public Works Department Since 1920.

DIVISION AND SERVICES.	1921-22.	Special Account 1921-22.	1922-23.	1923-24.	1924-25.	1925. (11 months.)	1926.	1927.	1928.	1929.
Central Office.....	\$88,308 02	\$3,072 64	\$100,457 23	\$84,717 60	\$86,511 11	\$81,432 27	\$89,009 05	\$88,214 06	\$87,166 21	\$89,413 83
Bridge Service.....	392,589 05	15,805 42	382,413 98	387,220 23	426,330 81	396,596 57	445,564 07	452,916 60	451,024 62	455,411 38
B o s t o n and Cambridge Bridges.....	27,999 77	2,433 95	27,669 10	30,832 74	31,740 49	19,309 12	18,983 08	16,496 35	15,584 52	14,893 33
Ferry Service.....	496,836 35	21,483 31	497,091 74	498,684 78	523,527 46	472,240 69	516,316 65	552,328 81	558,335 56	554,744 35
Lighting Service.....	722,091 55	134,127 03	734,059 09	747,191 63	830,736 90	820,768 34	927,329 94	953,642 82	977,195 76	1,010,513 01
Paving Service.....	1,110,496 07	34,869 68	925,828 45	1,140,959 74	1,208,503 43	1,240,788 13	2,252,030 79	1,396,279 48	1,567,712 85	1,511,609 52
Removal of Snow.....	215,399 21	6,611 10	416,720 51	364,713 64	349,375 57	75,494 95	1,234,123 87	786,521 98	313,692 83	641,255 20
Sanitary Service.....	*1,629,078 98	105,288 97	1,831,685 38	1,895,984 45	†2,073,913 32	1,877,228 67	2,050,603 65	2,089,907 75	2,087,116 27	2,177,678 60
Sewer Service.....	607,043 15	25,419 60	567,758 00	605,796 63	635,928 74	592,155 15	688,876 44	699,708 79	688,722 54	716,638 53
Street Cleaning Service.....	640,179 28	23,637 66	627,203 22	607,583 55	592,645 85	719,296 18	696,834 10	740,599 35	790,641 45	775,287 28
Street Watering and Oiling Service.....	145,454 29	491 24	122,865 88	108,842 33	79,476 90	53,420 88	51,458 88	49,375 06	41,700 49	46,366 66
Water Service.....	1,232,418 76	41,656 57	1,354,555 93	1,229,573 73	1,608,320 10	1,309,163 72	1,511,407 58	1,483,018 23	1,598,068 76	1,585,134 62
Totals.....	\$7,307,894 48	\$414,896 05	\$7,588,317 47	\$7,702,101 05	\$8,447,000 68	\$7,657,894 67	\$9,382,538 10	\$9,309,009 28	\$9,176,962 86	\$9,578,946 41

* Includes \$92,445.71 paid by Street Cleaning and Oiling Service.

† Includes \$142,724.96 paid by Street Cleaning and Oiling Service.

REVENUES, 1929.

On Account of the Public Works Department, as Per Auditor's Statement.

Bridge Service:

Maintenance, Chelsea Bridge	\$19,347 03
Rent	200 00
Sale of junk	25 00
Albany Street Bridge alterations	862 09
Damage to Anderson Bridge	150 00
Damage to gates, etc.	119 25
Telephone	31
Rebate on express charge	75
	<hr/>
	\$20,704 43

Charlestown Bridge:

Rents	2,379 96
-----------------	----------

Columbus Avenue Bridge:

From Boston & Albany Railroad	255 00
	<hr/>

\$23,339 39

Ferry Service:

Tolls	\$71,529 07
Rent	697 32
Commission on telephones	83 01
Cleaning telephone booths	48 00
Free use of ferries (July 4)	1 00
Ice cream concession	20 00
Sale of junk	47 00
Sale of ferryboat "Noddle Island"	598 59
	<hr/>

73,023 99

Lighting Service:

Lighting Boston and Cambridge Bridges	\$133 86
Damage to posts	528 00
	<hr/>

661 86

Paving Service:

From assessments on abutters for cost of laying sidewalks in front of their premises, including material for same	\$28,665 66
Permits	24,338 41
Sale of material	3,606 70
	<hr/>

Carried forward \$56,610 77 \$97,025 24

<i>Brought forward</i>	\$56,610 77	\$97,025 24
Labor and materials (chapter 27, section 9, Revised Ordinances, 1925)	618 50	
Labor and materials furnished, etc.	1,531 34	
Use of roller	77 00	
Rent of sign	290 00	
Repairing signs	97 96	
Refund on auto registration	3 00	
Damage to auto	38 38	
	<hr/>	59,266 95
Sanitary Service:		
Collection of commercial waste	\$69,476 40	
Sale of manure	3,257 96	
Sale of waste paper	34 60	
Sale of old harness	5 00	
Sale of junk	10 00	
Damage to auto	38 41	
Oiling street	175 71	
	<hr/>	72,998 08
Sewer Service:		
Pumping sewage, amount re- ceived from Commonwealth,	\$11,998 37	
Entrance fees	8,463 42	
Assessments on old sewers	87 41	
Labor and materials furnished	1,410 37	
Sale of hay	19 00	
Sale of junk	67 00	
Easement	1 00	
Rent	60 00	
Balance on deposits	9 26	
	<hr/>	\$22,115 83
Separate Systems of Drainage:		
Assessments	\$668 28	
Interest on assess- ments	35 81	
	<hr/>	724 09
Sewerage Works:		
Assessment under chapter 450, Acts of 1899	\$64,066 34	
Interest on assess- ments	14,544 60	
Service of Inspec- tor	1,035 20	
L a b o r and ma- terials	411 19	
	<hr/>	
<i>Carried forward,</i>	\$80,057 33	\$22,839 92
		<hr/>
		\$229,290 27

<i>Brought forward,</i>	\$80,057 33	\$22,839 92	\$229,290 27
Rent	350 00		
Settlement on contract, L u b e e street, etc., East Boston	4,162 49		
		84,569 82	
			107,409 74
Water Service:			
Water rates due:			
For the year 1929 and prior,	\$4,506,159 24		
Service pipes for new water takers extending, repairing, etc.		78,700 30	
Labor and materials		6,272 30	
Elevator and fire pipe connections		18,947 33	
Sales of materials		6,776 86	
Fees on overdue rates		4,507 34	
Shutting off and letting on water, Interest on deposits		16 00	
Testing meters		1,654 91	
Relocating hydrants		371 00	
Relocating hydrants		868 11	
Damage to hydrants		800 11	
Damage to pipes caused by picks, Rents		60 78	
Board of horse		100 00	
Board of horse		91 50	
Removing and relocating fountains		120 14	
Repairs to sidewalks, etc. . . .		79 36	
Damage to auto		6 00	
Loan of tools		5 00	
Rent of meter		5 00	
Refund telephone		2 00	
Easement		1 00	
			4,625,544 28
Total			<u><u>\$4,962,244 29</u></u>

CONTRACTS MADE BY THE PUBLIC WORKS DEPARTMENT FROM FEBRUARY, 1929, TO DECEMBER, 1929.

Hired Teams and Trucks.

DISTRICT.	Awarded to	Dated.	Doubles, Per Day.	Trucks, Per Day.	Progress of Work.	Contract Estimated.	Amount Expended in 1929.
All districts of the Public Works Department of the City of Boston.	Edward J. McHugh & Son....	February 18, 1929,	\$8 00	\$23 00	Completed Dec. 31, 1929....	\$3,000 00	\$6,887 50

¹ Only bid; not advertised.

BRIDGE AND FERRY DIVISION (BRIDGE SERVICE). Bridge Work.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1929.
¹ Repairing fence railings at Broadway Bridge, over New York, New Haven & Hartford Railroad.	New England Construction and Maintenance Company.	May 22, 1929.	Completed July 20, 1929...	\$1,002 50	\$1,176 25
¹ Painting Cambridge Street Bridge.....	Stevens Lacios Company.....	May 23, 1929.	Completed June 14, 1929...	960 00	960 00
¹ Painting Broadway Bridge, over the New York, New Haven & Hartford Railroad.	Maurice M. Devine.....	May 28, 1929.	Completed Oct. 28, 1929...	4,800 00	4,800 00
¹ Repairing Granite Avenue Bridge.....	The Rendle Corporation.....	June 3, 1929.	Completed Aug. 22, 1929...	7,006 00	33,523 25
¹ Pointing masonry of Charlestown Bridge store-houses.	Walsh & Co.....	July 8, 1929.	Completed Aug. 20, 1929...	1,685 00	1,330 70
¹ Repairing Chelsea Bridge North piling.....	W. H. Ellis & Son Company...	July 17, 1929.	Completed Sept. 25, 1929...	9,433 00	10,444 40
¹ Rebuilding River Street Bridge, over the Midland Division of the New York, New Haven & Hartford Railroad.	John McCourt Company.....	Aug. 7, 1929.	Unfinished.....	107,118 75	75,817 36
¹ Furnishing and installing an air compressor at the Northern Avenue Bridge.	Gustavo Preston Company...	Aug. 19, 1929.	Completed Nov. 30, 1929...	6,726 00	6,726 00
¹ Repairing steel and rebuilding floor of draw span of Prison Point Bridge.	New England Construction and Maintenance Company.	Sept. 12, 1929.	Unfinished.....	18,240 50	3,620 14
¹ Building and completing Congress Street Bridge, over Fort Point Channel.	Coleman Brothers, Inc.....	Sept. 13, 1929.	Unfinished.....	754,175 00	81,055 15
¹ Guniting and painting Beacon Street Bridge, over the Boston & Albany Railroad.	Maurice M. Devine.....	Nov. 6, 1929.	Completed Dec. 21, 1929...	1,363 75	1,367 18
¹ Repairing paving on pile spans, Chelsea Bridge North.	Walsh & Co.....	Nov. 21, 1929.	Completed Dec. 23, 1929...	630 00	451 35
¹ Fabricating and erecting two roadway gates at Charlestown Bridge draw.	Smith & Lovett Company....	Dec. 13, 1929.	Unfinished.....	960 00	Nothing.
² Installing pins in tower of Charlestown Bridge.....	Boston Bridge Works.....	Nov. 6, 1929.	Completed Nov. 30, 1929...	1,700 00	1,700 00

¹ Advertised and awarded to the lowest bidder.

² Only bid; not advertised.

BRIDGE AND FERRY DIVISION (FERRY SERVICE).
Ferry Work.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1929.
2 Teaming coal to ferriesboats.....	Delia L. Carter.....	Dec. 29, 1929.	Completed Dec. 31, 1929. . .	\$2,800 00	\$2,817 00
1 Repairing hull, etc., of ferryboat "Lieutenant Flaherty."	Bethlehem Shipbuilding Corporation, Limited.	Feb. 27, 1929.	Completed March 19, 1929.	8,573 00	6,993 00
1 Repairing hull, etc., of ferryboat "John H. Sullivan,"	R. T. Green Company.....	April 9, 1929.	Completed June 27, 1929. . .	14,041 00	9,657 15
1 Repairing ferry piers at the North and South Ferries,	W. H. Ellis & Son Company..	June 4, 1929.	Completed Aug. 21, 1929. . .	6,877 50	12,417 30
1 Repairing hull, etc., of ferryboat "Ralph J. Palumbo."	R. T. Green Company.....	July 8, 1929.	Completed Aug. 16, 1929. . .	9,636 00	8,020 60
1 Repairing hull, etc., of ferryboat "Charles C. Donoghue."	R. T. Green Company.....	Oct. 7, 1929.	Completed Oct. 26, 1929. . .	7,966 00	6,905 10
1 Repairing hull, etc., of ferryboat "Daniel A. MacCormack."	Bethlehem Shipbuilding Corporation, Limited.	Dec. 13, 1929.	Unfinished.....	6,993 00	Nothing.

¹ Advertised and awarded to the lowest bidder.

² Only bid; not advertised.

HIGHWAY DIVISION (LIGHTING SERVICE). Contract in Force Made in Previous Years.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Price Per Gas Lamp Per Year.
¹ Furnishing gas and for the equipment and lighting of gas lamps for a period of ten years, from April 1, 1924, to March 31, 1934, inclusive.	Boston Consolidated Gas Company.....	May 20, 1924.	Unfinished.....	\$11 00

¹ Advertised and awarded to the only bidder.

HIGHWAY DIVISION.

Miscellaneous.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1929.
Concrete retaining wall in Ashland street, Ward 19 (north side), from 68 feet west of Brown avenue for 365 feet westerly.	Martino DeMatteo.....	Jan. 5, 1929.	Completed Nov. 30, 1929....	\$15,000 00	\$15,918 00
Repairing bituminous pavement in any street upon which the maintenance guaranty has expired.	Central Construction Company	March 14, 1929.	Completed Dec. 31, 1929...	112,375 00	121,426 15
Laying artificial stone sidewalks, driveways, and re-setting edgestones at Paul Gore street, West Roxbury, and at corner of Columbus avenue and Walnut avenue, West Roxbury.	Thomas J. Kelly.....	June 12, 1929.	Completed August 7, 1929..	1,000 00	932 98
Recutting and relaying granite block pavement in Causeway street, between Nashua and Lowell streets, City Proper.	Samuel J. Tomasello.....	June 20, 1929.	Completed Sept. 1, 1929....	3,500 00	3,783 60
Reconstructing sidewalks in Rowe street, from No. 27 to Cummins Highway.	Thomas J. Kelly.....	July 23, 1929.	Completed Nov. 1, 1929....	1,430 00	1,869 23
Concrete retaining wall and iron fence on the northerly side of Bowdoin terrace, Ward 14.	A. G. Tomasello & Son, Inc....	Aug. 12, 1929.	Completed Nov. 10, 1929....	1,500 00	1,500 00

Removing Snow and Ice.

District.	Contractor.	Dated.	Progress of Work.	Price Per Cubic Yard.	Amount Expended in 1929.
District No. 1.....	Hugh Nawn, Inc.....	Dec. 21, 1929.	Unfinished.....	\$0.48	Nothing.
District No. 2.....	Leo J. Nawn, Inc.....	Dec. 19, 1929.	Unfinished.....	.48	Nothing.
District No. 3.....	B. E. Grant Company.....	Dec. 21, 1929.	Unfinished.....	.55	Nothing.
District No. 4.....	B. E. Grant Company.....	Dec. 21, 1929.	Unfinished.....	.54	Nothing.
District No. 5.....	Joseph P. McCabe, Inc.....	Dec. 26, 1929.	Unfinished.....	.45	Nothing.
District No. 6.....	A. G. Tomasello & Son, Inc...	Dec. 21, 1929.	Unfinished.....	.65	Nothing.
District No. 7.....	Ormack Company.....	Dec. 21, 1929.	Unfinished.....	.49	Nothing.
District No. 8.....	J. C. Coleman & Sons Company.	Dec. 21, 1929.	Unfinished.....	.35	Nothing.
District No. 9.....	Frank J. Jacobs Company.....	Dec. 21, 1929.	Unfinished.....	.45	Nothing.
District No. 10.....	Coleman Brothers, Inc.....	Dec. 21, 1929.	Unfinished.....	.48	Nothing.
District No. 11.....	C. M. Callahan, Inc.....	Dec. 21, 1929.	Unfinished.....	.45	Nothing.
District No. 12.....	Coleman Brothers, Inc.....	Dec. 21, 1929.	Unfinished.....	.48	Nothing.

SANITARY DIVISION (SANITARY SERVICE).
Collecting and Removing Ashes, Store Dirt, House Dirt, Refuse and Garbage.

DISTRICT.	Awarded to	Dated.	Progress of Work.	Bid Per Month.	Amount Expended in 1929.
² East Boston.....	Massachusetts Contracting Company, Inc.	Jan. 31, 1929.	Completed Dec. 31, 1929....	\$4,250 00	\$51,000 00
¹ Brighton.....	Thomas Joseph McCue.....	Jan. 31, 1929.	Completed Dec. 31, 1929....	6,245 00	74,940 00
² West Roxbury.....	Coleman Brothers, Inc.....	Jan. 31, 1929.	Completed Dec. 31, 1929....	4,200 00	50,400 00
² Dorchester.....	Coleman Brothers, Inc.....	Jan. 31, 1929.	Completed Dec. 31, 1929....	17,290 00	207,480 00
¹ Hyde Park.....	David W. Norton.....	Jan. 31, 1929.	Completed Dec. 31, 1929....	1,100 00	13,200 00

¹ Advertised and awarded to the lowest bidder.² Advertised and awarded to the second bidder.

Contract in Force Made in Previous Years.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Bid Per Year.	Amount Expended in 1929.
¹ Disposal of garbage and refuse for ten years, from July 1, 1922, to July 1, 1932.	Coleman Brothers, Inc.....	Dec. 31, 1921.	Unfinished.....	\$345,000 00	\$345,000 00

¹ Advertised and awarded to the lowest bidder.

SANITARY DIVISION (SANITARY SERVICE).

Miscellaneous.

CONTRACT.	Awarded to	Dated.	Progress of Work.	Estimated Cost.	Amount Expended in 1929.
² Removing manure from the stables and yards in the various divisions of the department.	J. N. Smith & Co.	Dec. 29, 1928.	Completed Dec. 31, 1928. . .	* \$10 80	* \$2,788 20
³ Furnishing combination motor street sprinkling and flushing trucks.	B. E. Grant Company.	May 4, 1929.	Completed Oct. 31, 1929. . .	† 34 00	35,780 75
¹ Repairing garbage dump station at South street.	Walsh & Co.	May 23, 1929.	Completed Nov. 1, 1929.	4,860 00	6,580 00
¹ Repairing Fort Hill garbage dump station at Atlantic avenue.	New England Construction and Maintenance Company.	Sept. 12, 1929.	Unfinished.	4,010 00	6,138 21

¹ Advertised and awarded to the lowest bidder.² Advertised and awarded to the higher bidder.³ Per horse per year; paid to city.

† Per day.

³ Only bid; not advertised.

WATER DIVISION (WATER SERVICE).
Laying and Relaying Water Pipes.

CONTRACT.	Awarded to.	Dated.	Progress of Work.	Contract Estimated.	Amount Expended in 1929.
¹ Belton street, Marsh street and Washington road, Dorchester; Arklow street, Round Hill street, Roxbury.	John Williams.....	April 2, 1929.	Completed May 8, 1929....	\$2,337 50	\$2,443 76
¹ Cheswick road, Cottage avenue, Craft place, Swallow street, West Roxbury; Brock street and Oakland street, Brighton.	John Williams.....	April 2, 1929.	Completed May 9, 1929....	1,702 00	2,277 80
¹ Addington road, Caspar street, Barlow street, Elven road, Malcolm road, Manthorne road, Sanborn avenue, West Roxbury; Chestnut terrace, Lyne road, Brighton; Almont street, Harvard street and Walk Hill street, Dorchester.	Appel & O'Toole.....	April 16, 1929.	Completed June 27, 1929....	4,795 75	5,175 96
¹ Ashton street, Tennis road, Dorchester; Avalon road, Charline avenue, Finedale road, Spinney street, West Roxbury; and LaRose place, Dorchester.	C. Russo.....	May 15, 1929.	Completed June 12, 1929....	3,248 60	1,930 25
¹ Merrimac street, Huntington avenue, city proper; Kilmarnock street, Roxbury; Mt. Bowdoin terrace, Homes avenue, Fairview avenue and Oldfields street, Dorchester.	N. DiBartolomeo Company...	May 15, 1929.	Completed July 12, 1929....	4,290 00	3,828 57
¹ Wood avenue, Hyde Park; Bearse avenue, Butler street, Crest avenue, Regis road, Dorchester; James street, Rustic road, Thurloy street, West Roxbury; Montcalm avenue, Brighton.	A. Piatelli & Co.....	May 28, 1929.	Completed Aug. 10, 1929....	5,975 50	6,608 28
¹ Basile street, Cushing street, Dent street, Glenham street, Linfall street, Parley avenue, West Roxbury; and Ryder Hill road, Brighton.	Charles Struzziery.....	June 18, 1929.	Completed July 30, 1929....	2,235 70	2,246 44

1 Allandale street, Hackensack road, Malcolm road and right of way, West Roxbury.	V. Barterra Company.....	Aug. 7, 1929.	Completed Oct. 17, 1929....	9,588 50	8,206 25
Milk street, Bowdoin street, Huntington avenue, Waltham street, city proper; Downing street, Lamont street, Kearsarge avenue, Linden avenue, Roxbury.	L. Balboni.....	Aug. 9, 1929.	Completed Oct. 10, 1929....	6,740 00	4,970 00
Hyrd avenue, Charne avenue, Clarendon park, Dont street, Herbert road, Montvale street, Rowe place, Stimson street, West Roxbury; Linwood street and Thatcher street, Hyde Park.	Appel & O'Toole.....	Aug. 20, 1929.	Completed Nov. 1, 1929....	2,759 00	2,905 14
1 Cheriton road, Cottage road; Eastwood circuit, Edgemere road, Hinsdale road, Oakmere street, Perham street, Welles terrace, West Roxbury, and Emery road, Brighton.	N. DiBartolomeo Company....	Sept. 13, 1929.	Completed Oct. 30, 1929....	1,728 75	1,571 37
1 Nashua street, between Minot and Leverett streets, city proper.	John Williams.....	Oct. 1, 1929.	Completed Oct. 15, 1929....	2,382 50	2,050 29
1 Agnes avenue, Blake street, River street, Tileston street and Woodland road, Hyde Park.	Charles Struzziery.....	Oct. 24, 1929.	Unfinished.....	2,882 50	1,668 86
1 Bellamy street, Brighton; Burard street, Glenham street, West Roxbury; Mercier avenue, Dorchester; and Metropolitan avenue, Hyde Park.	L. P. Federico & Susi Co.....	Nov. 6, 1929.	Unfinished.....	2,560 40	2,099 02
Codman street (Southern Artery) and Wilmington avenue, Dorchester.	C. Russo.....	Nov. 18, 1929.	Completed Dec. 31, 1929....	2,447 00	1,765 58
Southern Artery, Rosslerin road, Parkview street, Bertram street and Ceylon street, Dorchester.	L. P. Federico & Susi Co.....	Nov. 25, 1929.	Unfinished.....	2,407 00	1,013 29
2 Oakland place, Dorchester.....	A. G. Tomasello & Son. Inc....	Dec. 21, 1929.	Unfinished.....	1,600 00	Nothing

1 Advertised and awarded to the lowest bidder.

2 Only bidder; unadvertised.

Area of Pavements.
Length in Miles and Character of Pavements on Accepted Streets January 1, 1930.

District.	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1929 report.....	1,281,794	1,660,779	2,660,042	211,316	23,824	45,653	141,239	5,471,879	410,683	108,872	12,016,081
Per cent.....	10.67	13.82	22.14	1.76	0.20	0.38	1.17	45.54	3.42	0.90	100.00
January 1, 1930.											
City proper.....	495,992	372,580	842,227	94,142	5,136	11,265	6,024	239,716	1,032	977	2,069,091
Charlestown.....	6,607	7,507	258,154	2,622	2,112	756	18,751	151,127	.....	.....	447,636
East Boston.....	61,452	38,342	147,924	187	1,422	771	.....	444,282	2,507	865	697,752
South Boston.....	47,442	57,691	424,418	13,457	5,599	3,068	.....	362,453	7,083	40,103	961,314
Roxbury.....	282,124	210,965	404,189	22,203	1,022	5,807	15,296	715,326	15,834	986	1,673,752
West Roxbury.....	202,726	362,205	173,740	417	1,471	.....	33,856	1,089,097	45,644	22,146	1,931,302
Dorchester.....	215,989	386,943	290,571	45,908	2,527	23,969	31,903	1,545,603	66,290	12,313	2,622,016
Brighton.....	168,888	271,936	95,201	4,080	1,696	17	41,425	486,119	55,456	4,333	1,129,151
Hyde Park.....	2,438	56,004	13,029	2,212	2,839	.....	.....	337,864	192,846	12,527	619,859
Total.....	* 1,483,758	† 1,764,173	‡ 2,649,453	185,228	23,824	45,653	§ 147,255	|| 5,371,587	386,692	94,250	12,151,873
Per cent.....	12.21	14.52	21.80	1.52	0.20	0.38	1.21	44.20	3.18	0.78	100.00

NOTE.—In the above table the city is subdivided substantially on the boundary lines between the districts as they existed when annexed to Boston. Territory annexed from Brookline is included in city proper.

* Of this amount 2,103 square yards is bitulithic, and 1,348 square yards is Kyrock, and 470 square yards is Unionite, and 114 square yards is rubber.

† Of this amount 771 square yards is asphalt block, and 142,762 square yards is asphalt concrete, and 1,329,233 square yards is bitulithic, and 959 square yards is Fibertine, and 22,072 square yards is Sinasco, and 268,161 square yards is Topeka, and 215 square yards is Carey Elastite paving.

‡ Of this amount 947 square yards is cobble, and 1,700,811 square yards is granite block paving on concrete base.

§ Of this amount 2,641,084 square yards is Blome Granitoid concrete blocked pavement.

|| Of this amount 33,026 square yards public alleys included in this table.

33,026 square yards public streets in charge of Park Department included in this table.

303,132 square yards public streets in charge of Commonwealth of Massachusetts included in this table.

76,789 square yards public streets in charge of Commonwealth of Massachusetts included in this table.

In addition to this table there are 7,223 square yards of accepted footways.

Length of Pavements.

Area in Square Yards and Character of Pavements on Accepted Streets January 1, 1930.

District.	Sheet Asphalt.	Asphalt Concrete.	Granite Block.	Wood Block.	Plank on Bridges.	Brick.	Concrete.	Macadam.	Gravel.	Not Graded.	Totals.
Year 1929 report.....	71.35	78.98	101.25	9.31	1.14	2.04	8.10	330.46	26.46	2.48	631.57
Per cent.....	11.30	12.51	16.03	1.48	0.18	0.32	1.28	52.32	4.19	0.39	100.00
January 1, 1930.											
City proper.....	26.13	16.28	35.11	4.11	0.21	0.49	0.69	13.77	0.07	0.01	96.87
Charlestown.....	0.46	0.33	11.07	0.11	0.08	0.03	0.78	10.54	.....	.....	23.40
East Boston.....	2.83	1.47	6.60	0.01	0.10	0.04	.....	22.17	0.12	0.04	33.38
South Boston.....	3.41	2.60	17.56	0.78	0.25	0.13	.....	19.56	0.40	1.46	46.15
Roxbury.....	15.48	10.47	15.31	1.02	0.04	0.28	0.72	47.22	1.23	0.05	91.82
West Roxbury.....	12.30	18.57	3.64	0.02	0.07	.....	2.34	70.85	2.81	0.42	111.02
Dorchester.....	12.20	19.42	10.84	1.87	0.13	1.07	1.87	94.51	4.28	0.17	146.36
Brighton.....	7.01	13.13	0.91	0.11	0.10	.....	2.22	28.03	3.74	.....	55.25
Hyde Park.....	0.15	2.52	0.08	0.13	0.16	.....	.....	19.59	12.63	0.24	35.50
Totals.....	* 79.97	† 84.79	‡ 101.12	8.16	1.14	2.04	§ 8.62	|| 326.24	25.28	2.39	639.75
Per cent.....	12.50	13.25	15.81	1.28	0.18	0.32	1.35	50.99	3.95	0.37	100.00

NOTE.— In the above table the city is subdivided substantially on the boundary lines between the districts as they existed when annexed to Boston. Territory annexed from Brookline is included in city proper.

* Of this amount 0.16 mile is Biturock; 0.08 mile is Kyrook; 0.02 mile is Unionite and 0.00 mile is rubber.

† Of this amount 0.02 mile is asphalt block; 6.83 miles is asphalt concrete; 62.53 miles is bitulithic; 0.06 mile is Filbertine; 1.28 miles is Simaseo; 14.07 miles is Topeka and 0.00 mile is Carey Elastite paving.

‡ Of this amount 0.04 mile is cobble and 63.33 mile is granite block paving on concrete base.

§ Of this amount 0.06 mile is Blome Granitoid concrete blocked pavement.

|| Of this amount 153.32 miles is Bituminous macadam.

6.28 miles public alleys included in this table.

7.24 miles public streets in charge of Park Department included in this table.

2.59 miles public streets in charge of Commonwealth of Massachusetts included in this table.

In addition to this table there are 1.43 miles of accepted footways.

The following changes were made in pavement during the year 1929:

0.03 mile or 822 square yards sheet asphalt changed to bitulithic.
 0.01 mile or 543 square yards sheet asphalt changed to granite block.
 0.09 mile or 1,067 square yards sheet asphalt changed to macadam.
 0.40 mile or 9,647 square yards asphalt concrete changed to sheet asphalt.
 0.00 mile or 50 square yards asphalt concrete changed to bitulithic.
 0.26 mile or 7,721 square yards bitulithic changed to sheet asphalt.
 0.00 mile or 300 square yards Topeka changed to sheet asphalt.
 0.00 mile or 26 square yards Topeka changed to bitulithic.
 0.36 mile or 19,809 square yards granite block changed to sheet asphalt.
 0.12 mile or 3,629 square yards granite block changed to bitulithic.
 0.00 mile or 8 square yards granite block changed to concrete.
 0.00 mile or 11 square yards granite block changed to macadam.
 0.72 mile or 14,830 square yards wood block changed to sheet asphalt.
 0.42 mile or 10,917 square yards wood block changed to bitulithic.
 0.00 mile or 453 square yards wood block changed to granite block.
 0.00 mile or 72 square yards concrete changed to bitulithic.
 3.20 miles or 81,548 square yards macadam changed to sheet asphalt.
 0.12 mile or 2,365 square yards macadam changed to asphalt concrete.
 2.38 miles or 39,584 square yards macadam changed to bitulithic.
 0.01 mile or 1,526 square yards macadam changed to granite block.
 0.50 mile or 6,115 square yards macadam changed to concrete.
 2.24 miles or 35,586 square yards gravel changed to sheet asphalt.
 0.42 mile or 6,746 square yards gravel changed to asphalt concrete.
 1.19 miles or 21,434 square yards gravel changed to bitulithic.
 0.25 mile or 5,209 square yards gravel changed to granite block.
 1.73 miles or 28,810 square yards gravel changed to macadam.
 0.23 mile or 14,529 square yards not graded changed to sheet asphalt.
 0.00 mile or 2,910 square yards not graded changed to bitulithic.

EMPLOYEES.

The following tables show the number of requisitions made on the Civil Service Commission for men; the number appointed, reinstated, died, resigned, transferred and retired; also the grade and number of employees in the department:

Requisitions made on the Civil Service Commission .	51
Number of men called	211
Number of men certified	366
Number of men appointed	248
Promotions allowed	60
Reinstatements allowed	* 81
Number of men resigned	26
Number of men died	54

*Eighty on eligible list, January 1, 1929.

Number retired under Retirement Acts	84
Number of transfers to other departments	8
Number of transfers from other departments	39
Number of men discharged	15

The records of the department show that there are now 3,131 persons eligible for employment in the several divisions and of that number 3,080 were upon the January, 1930, pay rolls.

Grade and Number of Employees.

TITLE.	SERVICES.								
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.
Commissioner.....	1								
Division engineers.....		1	1				1		1
Engineers in charge.....		1							1
Chief clerk.....	1								
Clerks.....	38	22	9	2	2	1	2	1	46
Assistant engineers (civil).....		17	26	1			9		5
Draughtsmen.....		1	12				4		2
Instrumentmen.....		13	21				4		7
Rodmen.....		4	4				2		
Inspectors.....	1	39	48	53	28		3	1	28
Foremen.....		11	5	11	11		1		12
Subforemen.....		20					3		
Address printers.....									3
Blacksmiths and assistants.....		8	3	20					5
Blueprinters.....	2		3						
Chauffeurs-teamsters.....	1	44	24	60	34		3		14
Carpenters and assistants.....		16	3	9		5	17		6
Chief inspectors.....		1							1
Cement testers and assistants.....	3								
Chemists and assistants.....		2							
Coal passers.....			2						
Constable.....				1					
Cashier.....						1			
Drawtenders and assistants.....							127		
<i>Carried forward.....</i>	47	200	161	157	75	7	176	2	131

Grade and Number of Employees.—Continued.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
<i>Brought forward</i>	47	200	161	157	75	7	176	2	131	956
Deckhands.....						26				26
Engineers (steam).....		11	5			12				28
Electricians.....			3			1	1			5
Feeders.....		2		3						5
Firemen.....		8	15			30				53
Gatemen.....			4			16				20
General foremen.....		1	1		1	1			1	5
Harnessmakers and assistants.....				8						8
Head chauffeurs.....		4								4
Horseshoers.....				8						8
Janitor.....						1				1
Matrons.....						7				7
Joiners.....						2				2
Laborers.....		282	89		110	13	5		164	663
Lamplighter.....						1				1
Machinist and assistants.....			8			9	1		20	38
Meter testers.....									8	8
Meter readers.....									30	30
Masons (stone and brick).....			10	1					2	13
Medical inspectors.....		1		1	1					3
Oilers.....			15			16				31
Pipe fitters and repairers.....						2			16	18
Pavers.....		65							3	68
Plumbers.....									20	20
Painters.....		7	1	11		3	3			25
Captains.....						12				12
Quartermasters.....						12				12
Repairers.....		26	1						108	135
Roofer.....						1				1
Rammers.....		5								5
Rigger.....						1				1
Sealers.....									3	3
<i>Carried forward</i>	47	612	313	189	187	173	186	2	506	2,215

Grade and Number of Employees.—Concluded.

TITLE.	SERVICES.									
	Central Office.	Paving.	Sewer.	Sanitary.	Street Cleaning.	Ferry.	Bridge.	Lighting.	Water.	Total.
<i>Brought forward</i>	47	612	313	189	187	173	186	2	506	2,215
Sewer flushers.....			26							26
Supervisors and deputy.....		1		1	1		1			4
Stenographers.....		1	1							2
Stonecutters.....		11	2							13
Superintendents and deputy.....		2	1						2	5
Stockkeepers.....				1		1				2
Stableman.....		14		20	19		2		1	56
Teamsters and helpers.....		89		425	203				12	729
Telephone operators.....					1				1	2
Tollmen.....						13				13
Chief veterinarian.....		1								1
Watchmen.....		1		13	4		2		6	26
Weighers.....		1		1						2
Wharfinger.....				1						1
Wharfmen.....				4						4
Wheelwrights and assistants.....				8						8
Yardmen.....		3	3	7	2				7	22
Totals.....	47	736	346	670	417	187	191	2	535	3,131

Number of Employees Actually Employed January 1, 1929, and January 1, 1930.

	Central Office.	Bridge.	Ferry.	Lighting.	Paving.	Sanitary.	Sewer.	Street Cleaning and Watering.	Water.	Total.
January 1, 1929.....	39	192	182	2	728	574	329	385	516	2,947
January 1, 1930.....	39	189	179	2	739	651	343	403	535	3,080

Total Eligible Force.

	Central Office.	Bridge.	Ferry.	Lighting.	Paving.	Sanitary.	Sewer.	Street Cleaning and Watering.	Water.	Total.
January 1, 1929.....	47	195	186	2	741	595	335	407	522	3,030
January 1, 1930.....	47	191	187	2	736	670	346	417	535	3,131

Appointments, Transfers, Resignations, Retirements, Deaths, etc., of Employees.

Died.	Retired.	Transferred to Other Departments.	Transferred to Other Services.	Discharged.	Resigned.	January 1, 1929.	SERVICES, 1929-1930.	January 1, 1930.	Transferred from Other Services.	Transferred from Other Departments.	Reinstated.	Appointed.
*	2	1	.....	.....	1	47	Central Office.....	* 47	1	2	.....	1
2	7	.....	3	.....	2	195	Bridge.....	191	2	1	.....	7
3	4	.....	5	.....	2	186	Ferry.....	187	.....	3	.....	12
.....	.....	.....	.....	.....	.....	2	Lighting.....	2	.....	.....	.....	.....
12	32	4	17	3	2	741	Paving.....	736	19	10	.....	36
14	7	.....	31	5	15	595	Sanitary.....	670	14	8	.....	125
11	12	.....	12	4	3	407	Street Cleaning.....	417	22	4	.....	26
4	8	2	5	.....	1	335	Sewer.....	346	6	5	.....	20
8	12	1	1	3	.....	522	Water.....	535	10	6	1	21
54	84	8	74	15	26	3,030	Totals.....	3,131	74	39	1	248

* Includes eight Central Office employees who are paid on Water Service pay roll.

PART II.
APPENDICES.

APPENDIX A.

CENTRAL OFFICE.	
Appropriation	\$90,856 73
Transfers	616 35
	<hr/>
Expenditures from January 1, 1929, to December 31, 1929	\$90,240 38
	89,413 93
	<hr/>
Balance	<u>\$826 45</u>
<i>Expenditures.</i>	
Salary, Commissioner	\$9,000 00
Salaries of clerks, stenographers, etc.	74,199 69
Automobile expenses:	
Wages of chauffeur	\$1,746 00
Repairs, etc.	266 79
Gasolene and oil	273 78
Supplies, tires, etc.	295 37
Registration and rent	21 00
	<hr/>
	2,602 94
Printing	1,590 96
Stationery	879 24
Postage	528 55
Telephone tolls	40 02
Travel	21 92
Books, papers and office supplies	160 71
New typewriter	88 00
Inspection of typewriters	110 25
Directories	60 50
Premium on bonds	10 00
Atlases	105 00
Sundries	16 15
	<hr/>
	<u>\$89,413 93</u>

APPENDIX B.

REPORT OF THE DIVISION ENGINEER OF
THE BRIDGE AND FERRY DIVISION.

BOSTON, January 1, 1930.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,—I respectfully submit the following report of the income, expenditures and operation of the Bridge and Ferry Division for the year ending December 31, 1929. The expenditures of the division in the regular maintenance appropriations of the department were \$1,025,049.06. Under a number of special appropriations \$296,613.53 was expended, making the total expenditure for the year \$1,321,662.59. This does not include certain expenditures for construction work for other departments, which work was supervised by the engineers of this division.

The more important works undertaken during the past year in the Bridge Service were the reconstruction of Congress Street Bridge, over Fort Point channel, which was started but will not be finished until the end of 1930; the beginning of the reconstruction of River Street Bridge, which involves considerable work on the approaches to the bridge; the alteration of the draw span of Prison Point Bridge, which was made into a fixed span, with a much more permanent pavement, and some strengthening, all of which eliminated a great deal of vibration and will cut down maintenance expenses.

An appropriation should be made as soon as possible for the reconstruction of Morton Street Bridge, over the New York, New Haven & Hartford Railroad, as the street on either side of the bridge is much wider than the bridge, making a bottle-neck at the bridge which is dangerous to traffic. The Railroad Company is willing to contribute toward the cost of the structure.

Albany Street Bridge, over the passenger tracks of the Boston & Albany Railroad, and Shawmut Avenue Bridge, over the tracks of the New York, New Haven & Hartford Railroad and Boston & Albany Railroad, are both deteriorating from rapid corrosion and should be rebuilt.

The pile approaches to the draw span of Chelsea North Bridge, which are badly deteriorated and gradually getting to be in a dangerous condition, should be rebuilt at once, preferably with a steel superstructure on masonry piers. As this will involve an expenditure of probably over \$1,000,000, it would be advisable to obtain a legislative act allowing the city to borrow some of the money outside of the debt limit.

In the Ferry Service at least one new boat should be provided to take the place of the old wooden vessels. The ferryboat "Noddle Island," an old wooden boat, is in such condition that it will have to be put out of commission and should be immediately sold.

Beacon Street Bridge.

November 6, 1929, a contract was approved with Maurice M. Devine for guniting and painting Beacon Street Bridge. All loose concrete was removed and replaced with gunite. All exposed metal work was cleaned and pointed. The work was completed December 21, 1929, at a contract cost of \$1,613.45.

Broadway Bridge.

May 22, 1929, a contract was approved with the New England Construction and Maintenance Company for repairing the fence railings on this bridge. All rusted and broken parts were replaced and the railings painted. The work was completed July 20, 1929, at a contract cost of \$1,176.25.

May 28, 1929, a contract was approved with Maurice M. Devine for cleaning and painting the bridge from the northerly abutment at Lehigh street to the southerly abutment at Foundry street, except spans 11 and 12, which were recently rebuilt, and the draw span. The metal work was patch coated with red lead, and after this was done two finish coats were applied. Some of the finish coat work was done by spraying. The contract cost was \$4,800.

Cambridge Street Bridge.

May 23, 1929, a contract was approved with Steves Lacios Company for cleaning and painting all the exposed metal work of this bridge. The work was completed June 14, 1929, at a contract cost of \$960.

Charlestown Bridge.

On June 8, 1929, a contract was approved with Walsh & Co. for pointing the masonry of Charlestown Bridge at the storehouses under the Charlestown approach. This work was completed August 20, 1929, at a contract cost of \$1,331.30.

On December 13, 1929, a contract was approved with Smith and Lovett Company, for building two roadway gates at the Charlestown end of the draw span, one in the middle roadway and one in the up-stream roadway. The work is now in progress and will be completed at an early date.

Chelsea Bridge North.

July 17, 1929, a contract was approved with W. H. Ellis & Sons Company for repairing the pile foundation on two bents on each side of the draw span. New piles were driven and posted up and new braces were fitted. The work was completed September 25, 1929, at a contract cost of \$10,444.40.

November 21, 1929, a contract was approved with Walsh & Co. for regulating the granite block paving on the pile spans of the bridge. The work was completed December 23, 1929, at a contract cost of \$1,161.

Chelsea Street Bridge.

July 29, 1929, a contract was approved with W. H. Ellis & Son Company, for repairing the fender pier. All broken and loose waling was replaced, new piles driven where needed and new planking placed on all the deck of the pier. The contract cost was \$6,584.70.

Congress Street Bridge.

September 13, 1929, a contract was approved with Coleman Brothers, Inc., for the rebuilding of this bridge. The entire old structure has been removed and a new channel dredged and the masonry 90 per cent completed. Work is progressing satisfactorily towards com-

pletion of the structure. The bridge will be of steel on masonry piers, with a bascule draw span.

Granite Avenue Bridge.

June 3, 1929, a contract was approved between the Granite Avenue Bridge Commission and the Rendle Corporation for rebuilding the floor of the entire bridge. Sheathing, under planking and stringers were renewed. Four lines of traffic treads were also placed on the bridge.

The work was completed under the supervision of this division, August 22, 1929, at a contract cost of \$7,046.50, of which the City of Boston paid one-half and the town of Milton one-half.

Northern Avenue Bridge.

August 19, 1929, a contract was approved with Gustavo Preston Company for furnishing and installing a motor driven air compressor with unloaders, oiling devices and other necessary accessories. A motor for driving the same, automatic starting device switch board gauges, pressure regulator wiring, etc., were also installed. The contract cost was \$6,726. Work was completed November 30, 1929.

River Street Bridge.

A contract was approved August 7, 1929, with John McCourt Company for rebuilding and widening this bridge. Masonry abutments have been built, the structural steel put in place and the filling of the approaches completed. The work was suspended during the winter months and will be completed early in 1930.

The headroom over the tracks is to be raised to 18 feet and provision is being made for four railroad tracks instead of two as at present.

MISCELLANEOUS REPAIRS TO CITY STRUCTURES.

South Street Garage Dump Station.

A contract was approved with Walsh & Co. for repairing this station; unsound piling, posts, braces and flooring was renewed. The runway to the building was sheathed with 2-inch spruce. The work was completed July 3, 1929, at a contract cost of \$6,580.30 for the Sanitary Division. It was supervised by the Bridge Division.

Fort Hill Garbage Dump Station.

A contract was approved September 12, 1929, for repairing this station. General repairs were made on the piling entrance ramp and floor of the dumping platform. The work was completed October 8, 1929, for the Sanitary Division at a contract cost of \$6,138.25. It was supervised by the Bridge and Ferry Division.

Long Island, Northwest Wharf.

A contract was approved June 8, 1929, for repairing this wharf to the Rendle Corporation. An entire new under deck was laid, new 2-inch sheathing placed and all unsound stringers and piling replaced. The work was completed July 19, 1929, for the Institutions Department at a contract cost of \$19,075.45. The work was under the supervision of this division.

Rainsford Island Wharf.

A contract was approved June 19, 1929, with the Rendle Corporation for repairing this wharf. New spring piles were driven; the drop repaired with new lumber and minor replanking done. A double gate was placed at the end of the wharf. This wharf is still in a very poor condition and if it is to be used next year, extensive repairs will be necessary. This year's work was completed July 8, 1929, at a contract cost of \$2,871.20, for the Institutions Department under the supervision of this division.

LIST OF BOSTON HIGHWAY BRIDGES.

(In the list those marked with an asterisk (*) are over navigable waters, and are each provided with a draw.)

1. BRIDGES WHOLLY MAINTAINED BY BOSTON.

In Charge of Bridge and Ferry Division.

Allston, over Boston & Albany Railroad at Cambridge street, Brighton.

Arlington street, over Boston & Albany Railroad.

B street (footbridge), over Neponset River, Hyde Park.

Baker street, at Brook Farm, West Roxbury.

Beacon street, over outlet to Back Bay Fens.

Beacon street, over Boston & Albany Railroad.

Bennington street, over Boston, Revere Beach & Lynn Railroad.

Berkeley street, over Boston & Albany Railroad.

Blakemore street, over New York, New Haven & Hartford Railroad, Providence Division.

Boylston street, over Boston & Albany Railroad.

Braddock Park (footbridge), over New York, New Haven & Hartford Railroad, Providence Division.

Broadway, over Boston & Albany Railroad.

* Broadway, over Fort Point channel.

Brookline avenue, over Boston & Albany Railroad.

Brooks street, Brighton.

Byron street, over Boston, Revere Beach & Lynn Railroad.

Charlesgate, in Fens, over Ipswich street.

* Charlestown, from Boston to Charlestown.

* Chelsea South, over south channel, Mystic river.

* Chelsea street, from East Boston to Chelsea.

Clarendon street, over the Boston & Albany Railroad and the New York, New Haven & Hartford Railroad.

Columbus avenue, over Boston & Albany Railroad.

Commercial Point, or Tenean, Dorchester.

* Congress street, over Fort Point channel.

Cummins Highway, over New York, New Haven & Hartford Railroad, West Roxbury.

Dana avenue, over Neponset river, Hyde Park.

Dartmouth street, over Boston & Albany Railroad.

* Dorchester avenue (formerly Federal street), over Fort Point channel.

* Dover street, over Fort Point channel.

Fairmount avenue, over Neponset river, Hyde Park.

Florence street, over Stony brook, West Roxbury.

Gainsborough street (footbridge), over New York, New Haven & Hartford Railroad, Providence Division.

Glenwood avenue East (footbridge), over Neponset river, Hyde Park.

Glenwood avenue West, over Mother brook, Hyde Park.

Gove street (footbridge), over Boston & Albany Railroad, East Boston.

Huntington avenue, over Boston & Albany Railroad.

Huntington avenue, over Stony brook, Hyde Park.

Hyde Park avenue, over Mother brook, Hyde Park.

Hyde Park avenue, over Stony brook, West Roxbury.

Hyde Park avenue, over Stony brook (near Clarendon Hills Station), Hyde Park.

Ipswich street, in Fens, over waterway.

Irvington street (footbridge), over New York, New Haven & Hartford Railroad, Providence Division.

Jones avenue (footbridge), over New York, New Haven & Hartford Railroad, Midland Division.

* Malden, from Charlestown to Everett.

Massachusetts avenue, over Boston & Albany Railroad.

Massachusetts avenue, over New York, New Haven & Hartford Railroad, Providence Division.

Metropolitan avenue (near Clarendon Hills Station), Hyde Park.

Neptune road, over Boston, Revere Beach & Lynn Railroad.

* Northern avenue, over Fort Point channel.

Rivermoor street, West Roxbury.

Shawmut avenue, over Boston & Albany Railroad and New York, New Haven & Hartford Railroad, Providence Division.

Southampton street, over South bay sluice.

Summer street, over A street.

Summer street, over B street.

Summer street, over C street.

* Summer street, over Fort Point channel.

* Summer street, over Reserved channel, South Boston.

Tollgate way (footbridge), over Providence Division, from Washington street to Hyde Park avenue, Forest Hills.

Walworth street, over the New York, New Haven & Hartford Railroad, Providence Division.

* Warren, from Boston to Charlestown.

Webster street (footbridge), East Boston, over Boston & Albany Railroad.

West Newton street, over New York, New Haven & Hartford Railroad, Providence Division.

West River street, over Mother brook, Hyde Park.

West Rutland square (footbridge), over New York, New Haven & Hartford Railroad, Providence Division.

Wordsworth street (footbridge), over Boston, Revere Beach & Lynn Railroad, East Boston.

In Charge of Bridge and Ferry Division and Park and Recreation Department.

Columbia road, over New York, New Haven & Hartford Railroad, Old Colony Division.

Columbia road, over Shoreham street.

In Charge of Park and Recreation Department.

Agassiz road, in Fens.

Audubon road, in Riverway, over Boston & Albany Railroad.

Berners street (footbridge), over Bridle Path in Riverway.

Boylston street, in Fens, over waterway.

Bridle Path, in Riverway, over Muddy river.

Charlesgate, in Fens, over Boston & Albany Railroad.

Circuit drive, over Scarboro pond, in Franklin Park.

Commonwealth avenue, in Fens, over waterway.

Cottage Farm, over Boston & Albany Railroad, at Commonwealth avenue.

Ellicott Arch, in Franklin Park.

Fens in Fens.

Forest Hills entrance, in Franklin Park.

Leverett pond (footbridge), in Olmsted Park.

Norfolk Street Playground (footbridge), over Midland Division, New York, New Haven & Hartford Railroad.

Public Garden (footbridge).

Scarboro pond (footbridge), in Franklin Park.

Wood Island (footbridge), over Boston, Revere Beach & Lynn Railroad, to World War Memorial Park.

In Charge of Transit Department.

Dorchester avenue, over Subway and freight track.

Columbia road, over Subway.

Savin Hill, over Subway.

Park street, over Subway.

Melville avenue, over Subway.

Mather street, over Subway.

Centre street, over Subway.

Welles avenue, over Subway.

Peabody square, over Subway (will take place of Ashmont street and Dorchester avenue).

Adams street, over Subway.

Cedar Grove, over Subway.

Medway street, over Subway.

II. BRIDGES OF WHICH BOSTON MAINTAINS THE PART WITHIN ITS LIMIT.

Central avenue, from Dorchester to Milton.

Milton, from Dorchester to Milton.

Paul's, over Neponset river, Hyde Park.

Spring street, from West Roxbury to Dedham.
Western avenue, from Brighton to Watertown.
Winthrop, from Breed's Island to Winthrop.

In Charge of Park and Recreation Department.

Bellevue street, in the Riverway, over Muddy river.
Berners street (footbridge), over Muddy river.
Brookline avenue, in the Riverway, over Muddy river.

Huntington avenue, in the Riverway, over Muddy river.

Longwood avenue, in the Riverway, over Muddy river.

III.—BRIDGES OF WHICH BOSTON PAYS A PART OF
THE COST OF MAINTENANCE.

In Charge of Bridge and Ferry Division.

Albany street, over Boston & Albany Railroad (over freight tracks).

Belgrade avenue, over New York, New Haven & Hartford Railroad, Providence Division.

Broadway, formerly Pleasant street, over the Subway.

* Chelsea North, over the north channel of the Mystic river.

Harvard street, over New York, New Haven & Hartford Railroad, Midland Division.

* Meridian street, from East Boston to Chelsea.

Morton street, over New York, New Haven & Hartford Railroad, Midland Division.

Norfolk street, over New York, New Haven & Hartford Railroad, Midland Division, near Dorchester Station.

River street, over New York, New Haven & Hartford Railroad, Midland Division, at River Street Station, Hyde Park.

*In Charge of Commissioners for Boston and Cambridge
Bridges.*

Anderson, from Brighton to Cambridge.

Longfellow, from Boston to Cambridge.

Cambridge street, from Brighton to Cambridge.

Cottage Farm, from Boston to Cambridge.

Prison Point, from Charlestown to Cambridge.

Western avenue, from Brighton to Cambridge.

In Charge of Commissioners for Granite Avenue Bridge.
Granite avenue, from Dorchester to Milton.

IV.—BRIDGES OF WHICH BOSTON MAINTAINS THE
WHOLE OR A PART OF THE WEARING SURFACE.

In Charge of Bridge and Ferry Division.

Austin street, over Boston & Maine Railroad, Charlestown.

Babson street, over New York, New Haven & Hartford Railroad.

Bennington street, over Boston & Albany Railroad.

Blue Hill avenue, over New York, New Haven & Hartford Railroad, Midland Division.

Boston street, over New York, New Haven & Hartford Railroad, Old Colony Division.

Cambridge street, Charlestown, over Boston & Maine Railroad.

Chelsea, over Boston & Maine Railroad.

Cummins Highway, over New York, New Haven & Hartford Railroad, Mattapan.

Curtis street, East Boston, over Boston & Albany Railroad.

Dana avenue, over New York, New Haven & Hartford Railroad, Midland Division, Hyde Park.

Dorchester avenue, over New York, New Haven & Hartford Railroad, Old Colony Division.

Everett street, over Boston & Albany Railroad, Brighton.

Fairmount avenue, over New York, New Haven & Hartford Railroad, Midland Division, and Station street, Hyde Park.

Glenwood Avenue West, over passageway connecting land of the New York, New Haven & Hartford Railroad, Hyde Park.

Harrison avenue, over Boston & Albany Railroad.

Hyde Park avenue, over proposed electric connection between Midland and Providence Division, New York, New Haven & Hartford Railroad, Hyde Park.

Maverick street, East Boston, over Boston & Albany Railroad.

Milton street, Hyde Park, over New York, New Haven & Hartford Railroad.

Mystic avenue, over Boston & Maine and Boston & Albany Railroads.

New Allen street, Hyde Park, over New York, New Haven & Hartford Railroad.

Perkins street (footbridge), over Boston & Maine Railroad.

Porter street, over Boston & Albany Railroad.

Prescott street, over Boston & Albany Railroad.

Redfield street, at Neponset, over New York, New Haven & Hartford Railroad, Old Colony Division.

Reservoir road, Brighton, over Boston & Albany Railroad, Newton Branch.

Saratoga street, over Boston & Albany Railroad.

Saratoga street, over Boston, Revere Beach & Lynn Railroad, East Boston.

Southampton street, over New York, New Haven & Hartford Railroad, Old Colony Division.

Sprague street, over New York, New Haven & Hartford Railroad, Midland Division, and branch of Providence Division, Hyde Park.

Summer street, over New York, New Haven & Hartford Railroad, Midland Division.

Sumner street, East Boston, over Boston & Albany Railroad.

West Fourth street, over New York, New Haven & Hartford Railroad, Old Colony Division.

V. BRIDGES MAINTAINED BY METROPOLITAN DISTRICT COMMISSION.

Charles River Dam.

* Dorchester Bay Bridge, from Commercial Point to Savin Hill.

Old Colony Parkway, near Savin Hill, at Patten's Cove.

Old Colony Parkway, over Tenen Creek.

Harvard, from Boston to Cambridge.

Mattapan, over Neponset river.

Neponset, from Dorchester to Quincy.

Parkway, over New York, New Haven & Hartford Railroad, West Roxbury.

North Beacon street, from Brighton to Watertown.

John W. Weeks Bridge, from Brighton to Cambridge.

VI. BRIDGES WHOLLY MAINTAINED BY RAILROAD CORPORATIONS.

First. Boston & Albany.—Albany street, over passenger tracks; Market street, Brighton; Tremont street; Washington street.

Second. Boston & Maine and Boston & Albany Railroads.—Main street.

Third. Boston & Maine Railroad, Eastern Division.—Boardman street, East Boston.

Fourth. Boston, Revere Beach & Lynn Railroad.—Everett street.

Fifth. New, York, New Haven & Hartford Railroad, Midland Division.—Athens street; Bolton street; Dorchester avenue; Silver street; Gold street; Washington street, Dorchester; West Broadway; West Fifth street; West Fourth street; West Second street; West Sixth street; West Third street.

Sixth. New York, New Haven & Hartford Railroad, Old Colony Division.—Savin Hill avenue.

Seventh. New York, New Haven & Hartford Railroad, Providence Division.—Albany street; Arlington square; Baker street, West Roxbury; Bellevue street, West Roxbury; Berkeley street; Broadway, South Boston; Canterbury street, West Roxbury; Centre and Mt. Vernon streets, West Roxbury; Columbus avenue; Dartmouth street; Gardner street, West Roxbury; Harrison avenue; Park street, West Roxbury; Washington street; West street, Hyde Park; West River street, Hyde Park.

RECAPITULATION OF BRIDGES.

I. Number wholly maintained by Boston:			
In charge of Bridge and Ferry Division .	65		
In charge of Bridge and Ferry Division and Park and Recreation Department,	2		
In charge of Park and Recreation Department	17		
In charge of Transit Department	12		
	—	96	
II. Number of which Boston maintains the part within its limits:			
In charge of Bridge and Ferry Division .	6		
In charge of Park and Recreation Department	5		
	—	11	
III. Number of which Boston pays a part of the cost of maintenance:			
In charge of Bridge and Ferry Division .	9		
In charge of Commissioners for Boston and Cambridge Bridges	5		
	—	—	
<i>Carried forward</i>	14	107	

<i>Brought forward</i>	14	107
In charge of Commissioners for Granite Avenue Bridge	1	15
—		
IV. Number for which Boston maintains the whole or a part of the wearing surface .		32
V. Number maintained by Metropolitan Park Commission		7
VI. Number maintained by railroad corpo- rations:		
1. Boston & Albany Railroad	4	
2. Boston & Maine and Boston & Albany Rail- roads	1	
3. Boston & Maine Railroad, Eastern Division .	1	
4. Boston, Revere Beach & Lynn Railroad .	1	
5. New York, New Haven & Hartford Railroad, Midland Division	12	
6. New York, New Haven & Hartford Railroad, Old Colony Division	1	
7. New York, New Haven & Hartford Railroad, Providence Division	16	
	—	36
Total number		<u>197</u>

FERRY SERVICE.

The following ferryboats are in commission:

Name.	When Built.	Length.	Gross Tons.
John H. Sullivan	1912	172 ft. 3 in.	527
Lieutenant Flaherty	1921	174 " 0 "	727
Ralph J. Palumbo	1921	174 " 0 "	755
Charles C. Donoghue	1926	174 " 4 "	756.77
Daniel A. MacCormack	1926	174 " 4 "	756.77

All these boats are of the propeller type and are all steel boats.

The "Noddle Island," a wooden propeller boat, was in such condition that repairs ordered by the United States Steamboat Inspection Service in April, 1928, were so expensive that it was deemed inadvisable to make them. The boat was sold at auction on February 18, 1929, for \$760.

The "General Sumner," a wooden propeller boat, is in extremely bad condition and repairs ordered by the Steamboat Inspection Service are such that it is useless to repair the boat. It should be sold at auction immediately in order to get rid of maintenance costs.

At least one new steel boat and preferably two new steel boats should be provided to help out the deficiency in service caused by the lack of the two wooden boats.

"LIEUTENANT FLAHERTY."

On February 27, 1929, a contract with the Bethlehem Shipbuilding Corporation, Limited, was approved by the Mayor, to make certain repairs to the hull incidental to the annual inspection of the boat by the United States Steamboat Inspection Service and such other repairs and renewals as were necessary to put the boat in proper condition. The miscellaneous repairs consisted of re-boring the cylinders of the main engines, fitting new bull-rings, snap-rings and followers, overhauling main thrust bearings, circulating pump and ship's fire and bilge pump. The work was completed on March 19, 1929, at a contract cost of \$6,429.40.

"JOHN H. SULLIVAN."

On April 9, 1929, a contract with the Richard T. Green Company was approved by the Mayor, to make certain repairs to the hull incidental to the annual inspection of the boat by the United States Steamboat Inspection Service and such other repairs and renewals necessary to put the boat in proper condition. The miscellaneous repairs consisted of reboring the cylinders of the main engines, renewing one section of one crank shaft, repairing main thrust bearings, repairing and rebabbitting certain main bearing brasses, overhauling, cleaning and testing condenser and installing ventilating system in boiler room. The work was completed on June 27, 1929, at a contract cost of \$9,657.15.

"RALPH J. PALUMBO."

On July 8, 1929, a contract with the Richard T. Green Company was approved by the Mayor, to make certain repairs to the hull incidental to the annual inspection of the boat by the United States Steamboat Inspection Service and such other repairs and renewals necessary to put the boat in proper condition.

The miscellaneous repairs consisted in reboring the cylinders of the main engines, fitting new bull-rings, snap-rings and followers, overhauling link motion and valves and minor renewals to small piping. The work was completed on August 16, 1929, at a contract cost of \$8,020.60.

"CHARLES C. DONOGHUE."

On October 7, 1929, a contract with the Richard T. Green Company was approved by the Mayor, to make certain repairs to the hull incidental to the annual inspection of the boat by the United States Steamboat Inspection Service and such other repairs and renewals necessary to put the boat in proper condition. The miscellaneous repairs consisted of minor repairs to the main engines and piping and the installation of boiler circulators. The work was completed on October 26, 1929, at a contract cost of \$6,905.10.

"DANIEL A. MACCORMACK."

On December 12, 1929, a contract with the Bethlehem Shipbuilding Corporation, Limited, was approved by the Mayor, to make certain repairs to the hull incidental to

the annual inspection of the boat by the United States Steamboat Inspection Service and such other repairs and renewals necessary to put the boat in proper condition. Work under this contract was not completed during 1929.

MISCELLANEOUS.

Piers.— On June 4, 1929, a contract with the W. H. Ellis & Son Company was approved by the Mayor, to make general repairs to all ferry piers or racks. This work consisted of removing unsound and crippled piles and wales and driving and securing in place new piles, girders and pier heads as required; the head of the middle pier, North Ferry, East Boston, and the head of the middle pier, South Ferry, Boston, were rebuilt. The work was completed on August 21, 1929, at a contract cost of \$12,417.30.

Department Force.— During the year the mechanics, machinists, painters, riggers and carpenters made such repairs to the plant as was possible with the equipment at their disposal. This work consisted of minor emergency repairs to the main engines, auxiliaries and piping of the boats, repairs to wood work and glazing around the plant generally and such routine work incidental to general operations.

Yours respectfully,

JOHN E. CARTY,
Division Engineer.

BRIDGE SERVICE.

FINANCIAL STATEMENT, 1929.

Expenditures from Maintenance Appropriation.

Boston bridges	\$455,411 38	
Boston and Cambridge bridges . .	14,893 33	
	<u> </u>	<u>\$470,304 71</u>

Total Expenditures.

From maintenance appropriation .	\$470,304 71	
From special appropriations . . .	273,430 98	
	<u> </u>	<u>\$743,735 69</u>

EXPENDITURES ON BOSTON BRIDGES.

(1) Administration:

Salaries:

Division engineer	\$3,750 00
Supervisor	3,460 55
Engineers and draughts-	
men	29,089 83
Clerk	2,200 00
Inspectors	4,976 35
Medical inspector	200 00
Foreman	2,459 11
Veterans' pensions	3,833 60
Holiday	7,509 61
Vacations	2,178 25
Injured employees	344 57
Printing, postage and sta-	
tionery	1,368 75
Traveling expense	304 40
Telephone and telegrams,	98 05
Repairing instruments	78 45
Typewriter inspection	36 00
Office supplies	86 50
Blueprint room	178 91
Miscellaneous	6 32

\$62,159 25

(2) Yard and Stockroom:

Yard:

Clerk and watchmen . . .	\$3,876 80
Traveling expense . . .	299 50
Tools, new . . .	911 17
Tools, repaired . . .	637 27
Telephone . . .	203 08
Repairs in yard and build- ings . . .	3,243 71
Supplies . . .	407 69
	<hr/>
	\$9,579 22

Stockroom:

Stock pur- chased . .	\$11,470 40
Stock used . .	13,098 45
	<hr/>
Decrease in stock . .	1,628 05

\$7,951 17

Automobiles and Trucks.

	Truck B-1.	Truck B-2.	Auto B-3.	Auto B-4.	Auto B-5.	Compressor B-6.	Truck B-7.	Auto B-8.	Auto B-9.	Auto B-10.	Total.
Cost, new.....	.....	.....	.....	.....	.....	.....	\$2,846 00	\$1,325 00	\$1,402 00	\$1,375 00	\$6,948 00
Chauffeurs.....	.....	.....	.....	.....	.....	.....	.....	1,546 13	.....	147 00	1,693 13
Storage.....	.....	\$18 00	\$105 00	.....	\$101 00	.....	18 00	105 00	10 00	15 00	372 00
Repairs.....	\$52 73	392 06	333 72	\$57 09	335 77	\$42 84	113 37	218 45	28 22	3 88	1,578 13
Supplies.....	.....	2 00	25	.....	.....	85	.....	25	18 61	6 70	28 66
Tires and tubes (new and repaired).....	26 00	130 75	119 80	17 50	42 15	.....	19 00	6 50	1 00	.....	362 70
Gasolene and oil.....	54 89	290 38	228 36	24 01	384 26	188 13	250 44	254 64	40 64	16 28	1,732 03
Registration.....	.....	2 00	4 50	.....	4 50	2 00	4 00	8 00	.....	2 00	27 00
Equipment.....	10 32	26 08	16 76	.....	52 62	66 29	2 99	36 42	.....	.....	211 48
Totals.....	\$143 94	\$861 27	\$808 39	\$98 60	\$920 30	\$300 11	\$3,253 80	\$3,500 39	\$1,500 47	\$1,565 86	\$12,953 13

Truck B-1 transferred to Sanitary Service.

Auto B-3 traded in part payment of B-10; B-4 traded in part payment of B-8; B-5 traded in part payment of B-9.

Tidewater Bridges.

BRIDGES.	Drawtenders' Salaries.	Mechanics' Wages.	Material.	Repair Bills.	Supplies.	Total.
Broadway.....	\$16,332 05	\$775 64	\$885 71	\$300 25	\$281 47	\$18,575 12
Charlestown.....	22,328 21	3,955 69	2,756 12	2,622 04	656 80	32,318 86
Chelsea North.....	18,793 47	2,458 22	765 58	2,977 31	1,558 73	26,553 31
Chelsea South.....	18,752 42	2,079 92	912 68	1,244 35	919 74	23,909 11
Chelsea Street.....	16,285 74	346 43	151 42	1,384 33	395 16	18,563 08
Congress Street*.....	11,683 05	1,021 22	174 80	188 55	639 36	13,706 98
Dorchester Avenue.....	16,269 68	1,471 64	395 13	1,494 80	392 94	20,024 19
Dover Street.....	16,302 44	1,992 35	1,381 30	494 53	241 97	20,412 59
L Street†.....	16,374 75	1,254 13	318 45	1,065 98	498 03	19,511 34
Malden.....	16,897 69	1,504 25	1,246 11	360 78	560 42	20,569 25
Meridian Street.....	17,028 90	2,680 95	652 72	516 00	343 49	21,222 06
Northern Avenue.....	19,185 96	8,198 31	10,387 58	4,656 75	5,214 44	47,643 04
Summer Street.....	17,791 64	2,103 66	1,112 62	917 83	383 32	22,309 07
Warren.....	16,711 38	1,635 64	939 04	2,280 56	507 34	22,073 96
Totals.....	\$240,737 38	\$31,478 05	\$22,079 26	\$20,504 06	\$12,593 21	\$327,391 96

* Closed for rebuilding, September 10, 1929.

† Now Summer Street, over Reserved Channel.

Repairs on Inland Bridges.

BRIDGES.	Labor and Material.
Albany Street.....	\$132 94
A Street Stairs.....	9 04
Austin Street — Prison Point.....	1,251 03
Arlington Street.....	92 47
Babson Street.....	490 17
Beacon Street, over Boston & Albany Railroad.....	122 86
Bennington Street.....	341 30
Blakemore Street.....	1,020 86
Blue Hill Avenue.....	157 11
Boston Street.....	934 45
Boylston Street, over Boston & Albany Railroad.....	3,676 49
Baker Street.....	36 00
Broadway, over Boston & Albany Railroad.....	895 85
Brookline Avenue.....	24 17
<i>Carried forward.</i>	\$9,184 74

Repairs on Inland Bridges.—Continued.

BRIDGES.	Labor and Material.
<i>Brought forward</i>	\$9,184 74
Cambridge Street — Allston.....	2,284 20
Cambridge Street, over Boston & Maine Railroad.....	50 59
Clarendon Street.....	142 32
C Street Stairs.....	122 67
Central Avenue.....	6,791 59
Cummins Highway.....	627 92
Camden Street—Gainsborough Street.....	72 48
Dana Avenue.....	53 92
Dartmouth Street (Rent).....	300 00
Dorchester Avenue, over New York, New Haven & Hartford Railroad....	281 29
Everett Street.....	148 46
Fairmount Avenue.....	36 00
Florence Street.....	44 69
Granite Avenue.....	17 02
Glenwood Avenue, over Mother Brook.....	88 55
Harvard Street.....	38 59
Huntington Avenue.....	684 97
Jones Avenue (Foot).....	270 83
Massachusetts Avenue, over New York, New Haven & Hartford Railroad..	49 12
Massachusetts Avenue, over Boston & Albany Railroad*.....	5,440 32
Milton Street.....	635 69
Milton Lower Mills.....	1,557 30
Neptune Road.....	47 76
New Allen Street.....	665 17
Redfield Street.....	39 36
Reservoir Road.....	171 17
River Street.....	197 42
Saratoga Street.....	544 11
Sprague Street.....	1,031 58
Shawmut Avenue.....	214 12
Southampton Street.....	807 85
Summer Street, over A Street.....	11 92
Summer Street, over B Street.....	37 34
Summer Street, over C Street.....	68 96
<i>Carried forward</i>	\$32,760 11

* Now Edward E. Ginsburg Memorial Bridge.

Repairs on Inland Bridges.—Concluded.

BRIDGES.	Labor and Material.
<i>Brought forward</i>	\$32,760 11
Summer Street, over New York, New Haven & Hartford Railroad.	494 02
Summit Avenue.....	46 91
Tremont Street.....	23 18
Toll Gate Way (Foot).....	123 90
Webster Street.....	4 39
Walworth Street.....	12 50
West Fourth Street.....	2,961 38
West Rutland Square — Durham Street.....	92 16
Winthrop.....	291 09
Cleaning bridges.....	3,422 92
Snow removal.....	4,723 31
Total.....	\$44,955 87

SUMMARY OF EXPENDITURES.

Administration	\$62,159 25
Yard and stockroom	7,951 17
Automobiles, trucks and compressor	12,953 13
Tidewater bridges	327,391 96
Inland bridges	44,955 87
Total	<u>\$455,411 38</u>

SPECIAL APPROPRIATIONS.

BRIDGES, REPAIRS, ETC.

ALBANY STREET BRIDGE.

Photographs	\$44 00
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B STREET STAIRS.

Transit Department pay roll	\$1,592 09
Material	820 32
	<u>2,412 41</u>

BEACON STREET BRIDGE, OVER BOSTON & ALBANY
RAILROAD.

Maurice M. Devine	\$1,367 18
Advertising	7 25
	<u>1,374 43</u>
<i>Carried forward</i>	\$3,830 84

Brought forward \$3,830 84

BROADWAY BRIDGE, OVER NEW YORK, NEW HAVEN &
HARTFORD RAILROAD.

Paint	\$498 48	
Analysis of paint	53 00	
Advertising	16 25	
Maurice M. Devine	4,800 00	
New England Construction and Maintenance Company	1,572 25	6,939 98

CAMBRIDGE STREET BRIDGE, ALLSTON.

Paint	\$1,089 91	
Analysis of paint	28 00	
Advertising	7 75	
Stevens Larios Company	960 00	2,085 66

CHARLESTOWN BRIDGE.

Material	\$1,341 49	
Paving repairs	1,639 64	
Traffic treads	1,654 38	
Advertising	16 25	
Flagmen	53 43	
Walsh & Co.	1,131 60	
Engineering	209 03	6,045 82

CHELSEA BRIDGE NORTH.

W. H. Ellis & Son Company	\$10,444 40	
Advertising	41 50	
Engineering	220 55	10,706 45

CHELSEA STREET BRIDGE.

W. H. Ellis & Son Company	\$6,584 70	
Advertising	8 00	
Engineering	212 87	6,805 57

DOVER STREET BRIDGE.

Progressive Iron Works, Inc.	\$3,354 22	
W. H. Ellis & Son Company	1,187 10	
Repairing sidewalk	391 66	
Transit Department pay roll	420 00	5,352 98

HUNTINGTON AVENUE BRIDGE.

Material	\$1,377 34	
Paving	906 94	
Photographs	31 25	
Flagmen	14 60	
Transit Department pay roll	145 85	2,475 98

L STREET BRIDGE.¹

Repairing paving	595 76	
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<i>Carried forward</i>	\$44,839 04	
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¹ Now Summer Street over Reserved channel.

Brought forward \$44,839 04

MASSACHUSETTS AVENUE BRIDGE, OVER BOSTON & ALBANY
RAILROAD.¹

Material	\$5,133 80	
Repair bills	2,554 30	
Flagmen	459 42	
Trucking	99 61	
Transit Department pay roll	2,019 83	
		<u>10,266 96</u>

MERIDIAN STREET BRIDGE.

W. H. Ellis & Son Company	257 46
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NORTHERN AVENUE BRIDGE.

Maurice M. Devine	\$3,461 10	
New England Construction and Maintenance Company	1,368 25	
Gustavo Preston Company	5,717 10	
Repair bills	1,245 85	
Advertising	8 00	
Transit Department pay roll	455 00	
		<u>12,255 30</u>

SHAWMUT AVENUE BRIDGE.

Photographs	33 00
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SUMMER STREET BRIDGE.

Repairing sidewalk	476 25
	<u>\$68,128 01</u>

CONGRESS STREET BRIDGE, PLANS, ETC.

Strauss Engineering Corporation	\$1,800 00	
Test piles	2,055 37	
Photographs	19 80	
Advertising	15 50	
Office supplies	608 41	
Traveling expense	286 93	
Engineering	8,019 99	
		<u>\$12,806 00</u>

CONGRESS STREET BRIDGE.

Coleman Brothers, Inc.	\$81,055 15	
Advertising	24 50	
New water pipe	662 15	
Car fares	39 65	
Architects' fees	15,484 78	
Engineers' supplies and instruments	97 80	
Engineering	2,080 20	
		<u>\$99,444 23</u>

OAKLAND AND ASHLAND STREETS, IMPROVEMENTS.

A. G. Tomasello & Son, Inc.	\$14,393 48	
Inspection of steel	24 32	
Engineering	990 40	
		<u>\$15,408 20</u>

¹ Now Edward E. Ginsburg Memorial Bridge.

RIVER STREET RECONSTRUCTION.

John McCourt Company	\$51,971 29	
Phandor Company	13,107 85	
New York, New Haven & Hartford Railroad Company	121 51	
Car fares	69 73	
Advertising	22 50	
Engineers' supplies and instruments	194 08	
Photographs	123 75	
Engineering	5,171 50	
		<u>\$70,782 21</u>

Expenditures from Special Appropriations, 1929.

	Balance from 1928.	Total Credits, Including Balances Carried Over and Transfers.	Expended During Year 1929.	Balances Unexpended December 31, 1929.
¹ Bridges, repairs, etc.	\$13,852 94	\$113,852 94	\$68,128 01	\$38,862 58
Cambridge Street Bridge, Re- building	16,894 92	.....	.....	16,894 92
² Columbus Avenue Bridge. . . .	10,864 34	6,583 36	.....	4,327 05
³ Congress Street Bridge.	879,975 25	879,975 25	99,444 23	703,410 77
Congress Street Bridge, plans, etc.	12,845 74	12,845 74	12,806 00	39 74
⁴ Oakland and Ashland streets, Improvements . . . . .	.....	.....	15,408 18	
⁵ River Street Reconstruction. . . . .	.....	.....	70,782 21	
Totals.	\$934,433 19	\$1,073,257 29	\$266,568 63	\$763,535 06

¹ \$6,862.35 expended by Boston and Cambridge Bridges Commission.² \$4,280.98 transferred to Brookline Street, Essex Street, Cottage Farm Bridge.³ and ⁴. See, also, Water Service.⁵ See, also, Paving Service.

Draw Openings, 1929.

BRIDGES.	STEAMERS.			SAILING VESSELS.			TUGS.			BARGES.			ALL OTHERS.			TOTAL NUMBER OF VESSELS.			Total Number of Cargoes.	Total Number of Openings.
	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.	Day.		Total.		
	Night.			Night.			Night.			Night.			Night.			Night.				
Broadway.....	8	4	12	63	.....	63	1,234	41	1,275	266	13	279	485	28	513	2,056	86	2,142	430	813
Charlestown.....	29	21	50	34	2	36	1,784	494	2,278	403	103	506	1,124	572	1,696	3,374	1,192	4,566	1,108	1,141
Chelsea North.....	1,720	198	1,918	37	1	38	11,585	1,096	12,681	1,717	226	1,943	1,171	74	1,245	16,230	1,595	17,825	2,307	6,840
Chelsea South.....	57	9	66	68	4	72	4,623	321	4,944	101	7	108	2,678	349	3,027	7,527	690	8,217	1,955	2,536
Chelsea Street.....	78	60	138	.....	.....	.....	1,797	716	2,513	171	119	290	1,575	168	1,743	3,621	1,063	4,684	981	2,545
* Congress Street.....	101	13	114	36	.....	36	1,697	98	1,795	295	27	322	577	23	600	2,706	161	2,867	476	1,545
Dorchester Avenue.....	26	18	44	53	4	57	1,169	86	1,255	254	33	287	459	24	483	1,961	165	2,126	408	1,189
Dover Street.....	.....	.....	.....	48	1	49	1,181	53	1,234	269	20	289	511	33	544	2,009	107	2,116	417	996
† L Street.....	26	36	62	125	36	161	1,510	839	2,349	198	91	289	1,284	662	1,946	3,143	1,664	4,807	521	3,251
Malden.....	105	60	165	18	.....	18	901	28	929	269	10	279	212	86	298	1,505	184	1,689	292	1,025
Meridian Street.....	678	348	1,026	46	4	50	6,119	1,679	7,798	802	395	1,197	4,064	768	4,832	11,709	3,194	14,903	2,242	7,899
Northern Avenue.....	529	338	867	61	2	63	4,400	301	4,701	488	44	532	2,171	191	2,362	7,649	876	8,525	1,508	3,905
Summer Street.....	129	13	142	55	1	56	2,272	174	2,446	452	48	500	755	45	800	3,663	281	3,944	681	2,166
Warren.....	23	20	43	19	2	21	1,810	470	2,280	546	89	635	1,069	585	1,654	3,467	1,166	4,633	1,051	2,158
Totals.....	3,509	1,138	4,647	663	57	720	42,082	6,396	48,478	6,231	1,225	7,456	18,135	3,608	21,743	70,620	12,424	83,044	14,377	38,009

* Closed for rebuilding September 10, 1929.

† Now Summer Street, over Reserved channel.

GRANITE AVENUE BRIDGE.*

Drawtenders' salaries	\$2,696 70
Material	313 88
Repairs	588 14
Supplies	60 57
The Rendle Corporation	3,523 25
	<u>\$7,182 54</u>

* Maintained jointly by County of Suffolk and town of Milton.

Granite Avenue Bridge Draw Openings from January 1, 1929, to December 31, 1929.

	STEAMERS.			SAILING VESSELS.			TUGS.			BARGES.			ALL OTHERS.			TOTAL NUMBER OF VESSELS.			Total Number of Cargoes.	Total Number of Openings.
	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.	Day.	Night.	Total.		
Openings							226		4	230	87	4	91	63	28	91	376	412	48	271

FERRY SERVICE.

FINANCIAL STATEMENT FOR THE YEAR ENDING DECEMBER 31, 1929.

1. Receipts.

Total cash receipts during the year	\$73,200 23
Cash in hands of tollmen at beginning of year	200 00
	<u>\$73,400 23</u>
Cash paid over to City Collector	\$73,023 99
Cash on hands of tollmen December 31, 1929	200 00
Cash in hands of cashier December 31, 1929	176 24
	<u>\$73,400 23</u>

2. Appropriations and Expenditures.

Received from annual appropriations for Ferry Service	\$564,238 20
Transferred to Sanitary Service	9,493 85
	<u>\$554,744 35</u>
Unexpended balances from special appropriations, January 1, 1929, *\$125,217 59	
Appropriation from taxes	20,000 00
	<u>*145,217 59</u>
	<u>\$699,961 94</u>
Total expenditures	577,926 90
Unexpended balances of special appropriations, December 31, 1929	<u>*\$122,035 04</u>

3. Result of Operations for the Year.

Receipts for the year (net income)	† \$73,200 23
Ordinary expenses (maintenance appropriation)	\$554,744 35
Interest paid on ferry debt	44,747 50
	<u>\$599,491 85</u>
<i>Carried forward</i>	\$599,491 85 \$73,200 23

* Of this amount \$50,000 in loans has been authorized but not issued.

† Includes \$176.24 in hands of cashier.

<i>Brought forward</i>	\$599,491 85	\$73,200 23
Depreciation on ferryboats	74,833 79	
Decrease in value of machinery and tools	420 33	
Decrease in value of fuel on hand	373 05	
	<hr/>	
	\$675,119 02	
Increase in value of supplies on hand	442 63	
	<hr/>	
Net outgo for the year		674,676 39
		<hr/>
Net loss for the year		* <u><u>\$601,476 16</u></u>

* Does not include expenditures for special appropriations.

Balance Sheet.

End of Fiscal Year, December 31, 1929.

ASSETS.		LIABILITIES.	
AVAILABLE ASSETS:		CURRENT LIABILITIES:	
Cash in hands of tollmen at close of year.....	\$200 00	None.	
Cash in hands of cashier at close of year.....	176 24		
Inventory of supplies, viz.:			
Fuel.....	3,794 40		
Supplies for maintenance.....	8,726 29		
Rents receivable.....	948 71		
Total available assets.....	\$13,845 64		
CONTINGENT ASSETS:		CONTINGENT LIABILITIES:	
City Treasurer.....	* 122,035 04	Appropriations account.....	* \$122,035 04
FIXED ASSETS:		FIXED LIABILITIES:	
Real estate, land and buildings ¹	* 610,100 00	Capital of the city invested in the ferries, viz.:	
Ferryboats ²	918,292 51	Total expenditures of all kinds for seventy-	
Machinery, tools, etc.....	4,033 01	two years, including interest on ferry	
		debt.....	\$22,983,755 62
Total tangible assets.....	\$1,668,306 20	Less total receipts.....	† 8,426,310 18
Deficiency or loss by operation and maintenance	13,011,174 28		
of the ferries for seventy-two years to date....			
	\$14,679,480 48		14,557,445 44
			\$14,679,480 48

* Includes \$50,000 authorized, but not issued.

† Does not include \$176.24 in hands of cashier.

¹ Original purchase.

New buildings, drops, slips, cost to 1913.....

Land, Lincoln's Wharf, cost to 1887.....

Land, Battery Wharf, cost, 1893.....

New drops, both ferries, cost from 1923 to

December 31, 1929.....

\$1,786,109 60

\$276,375 00

607,523 64

5,562 52

10,000 00

\$899,461 16

886,648 44

\$1,786,109 60

² Assessors' figures.³ Total cost to date, per ferry books.....

Less boats sold, depreciated or destroyed..

\$2,178,182 01

1,259,889 50

\$918,292 51

Comparative Balance Sheets at the Close of Each Year.

	December 31, 1925.	December 31, 1926.	December 31, 1927.	December 31, 1928.	December 31, 1929.
<i>Assets.</i>					
Cash, cashier's capital.....					\$176 24
Cash, tollmen's capital.....	\$200 00	\$200 00	\$200 00	\$200 00	200 00
Rents receivable.....	592 34	583 34	607 84	753 36	948 71
Fuel and supplies in stock	18,366 96	11,589 19	12,758 57	12,701 11	12,520 69
City Treasurer (balance of appropriation)	1,020,064 26	368,044 01	238,959 16	125,217 59	122,035 04
Ferryboats (less depreciation)	800,124 44	1,270,288 27	1,190,174 04	993,126 30	918,292 51
Machinery and tools.....	3,747 23	4,634 31	4,670 38	4,203 34	4,033 01
Real estate, land and buildings (assessors' valuation)	610,100 00	610,100 00	610,100 00	610,100 00	610,100 00
Total tangible assets.....	\$2,453,195 23	\$2,265,439 12	\$2,057,469 99	\$1,746,301 70	\$1,668,306 20
Cost of avenues, etc., East Boston (previous to 1871) ¹	315,815 68	315,815 68	315,815 68	315,815 68	315,815 68
Deficiency of assets (loss).....	9,726,416 60	10,465,340 20	11,216,403 27	12,070,895 24	12,695,358 60
Totals.....	<u>\$12,495,427 51</u>	<u>\$13,046,595 00</u>	<u>\$13,589,688 94</u>	<u>\$14,133,012 62</u>	<u>\$14,679,480 48</u>
<i>Liabilities.</i>					
Capital invested by City of Boston to date.....	\$11,475,363 25	\$12,678,550 99	\$13,350,729 78	\$14,007,795 03	\$14,557,445 44
Appropriations account (credit balances).....	1,020,064 26	368,044 01	238,959 16	125,217 59	122,035 04
Total liabilities.....	<u>\$12,495,427 51</u>	<u>\$13,046,595 00</u>	<u>\$13,589,688 94</u>	<u>\$14,133,012 62</u>	<u>\$14,679,480 48</u>

Details of Capital Invested by the City of Boston.

Total expenditures to date per ferry books.....	\$19,273,121 91	\$20,540,211 31	\$21,296,977 47	\$22,028,379 87	\$22,659,859 27
Interest of debt for the year (per City Auditor's reports).....	38,752 50	50,352 50	55,007 50	53,552 50	44,747 50
Interest, previous years, etc. (net debts, per City Auditor's reports),	279,148 85	279,148 85	279,148 85	279,148 85	279,148 85
Total expenditures.....	\$19,591,023 26	\$20,869,712 66	\$21,631,133 82	\$22,361,081 22	\$22,983,755 62
Deduct total receipts paid to City Collector.....	8,115,660 01	8,191,161 67	8,280,404 04	8,353,286 19	² 8,426,310 18
Excess expenditures, capital.....	<u>\$11,475,363 25</u>	<u>\$12,678,550 99</u>	<u>\$13,350,729 78</u>	<u>\$14,007,795 03</u>	<u>\$14,557,445 44</u>

¹ Included in deficiency of assets in Table 4.² Does not include \$176.24 in hands of cashier.

Comparison of Receipts, Appropriations and Expenditures.

	1925. (11 months.)	1926.	1927.	1928.	1929.
RECEIPTS.					
From foot passengers (tollmen)	\$22,254 80	\$23,087 75	\$21,907 61	\$20,794 51	\$18,677 72
From foot passes (office sales)	264 70	361 30	309 90	335 80	341 10
From extra passengers on teams (gatenen)	727 12	800 61	720 35	655 27	678 83
From team tickets (office sales)	2,026 00	2,307 00	2,753 50	3,024 10	2,649 00
From strip team tickets (tollmen)	11,400 50	12,531 00	12,187 00	12,070 50	11,719 50
From cash fares for teams (gatenen)	30,542 28	35,328 46	35,429 77	35,088 96	37,639 16
From free ferries July 4.	1 00	1 00	1 00	1 00	1 00
Total from rates.	\$67,216 40	\$74,417 12	\$73,309 13	\$71,970 14	\$71,706 31
From rents.	368 02	523 04	489 50	361 32	321 32
From old material sold.	15 00	12 00	68 00	10 00	47 00
From other sources.	549 73	549 50	* 15,375 74	540 69	** 1,125 60
Total ordinary receipts	\$68,149 15	\$75,501 66	\$89,242 37	\$72,882 15	\$73,200 23
EXPENDITURES (ORDINARY).					
Office:					
Division engineer's salary (part)†	\$833 33	\$1,250 00	\$1,250 00	\$1,250 00	\$1,333 33
General foreman and cashier †	4,704 06	5,259 69	5,416 09	5,632 50	5,817 90
Clerk.	1,281 13	1,459 83	1,500 00	1,562 65	1,601 12
Retired veterans' pensions.	6,442 76	6,247 13	4,161 53	4,620 63	5,906 35
Retired employees' pensions.	2,404 00	2,215 00	1,942 00	1,800 00	1,800 00
Medical inspector (part)	91 67	91 67	100 00	100 00	100 00
Stationery.	304 18	142 00	129 86	237 93	173 05

Printing.....	1,283 89	1,594 75	1,281 43	1,154 46	1,475 40
Telephones.....	237 89	270 02	279 30	257 69	313 94
Advertising.....	7 50	53 20	101 73	58 00	333 78
Car fares.....	101 45	109 73	127 26	131 25	150 05
Postage.....	20 00	4 00	4 00	6 00	2 00
Premiums, surety companies.....	85 00	94 00	91 00	169 00	171 92
Total office expenses.....	\$17,796 86	\$18,791 02	\$16,384 20	\$16,980 11	\$19,181 84
Ferryboats and landings:					
Employees (wages) \$.....	\$302,376 44	\$338,261 69	\$367,640 21	\$369,216 03	\$374,429 38
Fuel.....	62,388 96	66,738 24	67,657 76	64,916 93	62,760 09
Teaming, weighing coal, etc.....	3,152 02	4,331 75	2,848 00	1,878 00	2,817 00
Supplies.....	15,506 25	17,664 04	17,207 55	15,721 16	17,399 81
Gas.....	968 61	1,149 09	1,272 55	3,795 03	5,003 86
Oil.....	1,125 48	1,857 99	1,877 44	1,770 15	1,667 78
Electric light.....	4,579 53	5,848 39	6,583 97	6,048 38	5,758 38
Towing teams by electric motors.....	843 42	954 13	121 21		
Repairs of boats.....	51,571 46	48,702 43	58,516 16	63,943 43	43,070 15
Repairs of buildings, piers and drops.....	9,528 99	9,103 14	9,455 95	10,153 05	14,684 74
Furnishings.....	336 40	319 25	427 45	405 30	444 00
Other expenditures \$.....	2,076 17	2,595 49	2,336 36	3,507 99	2,527 32
Total.....	\$472,240 69	\$516,316 65	\$552,328 81	\$558,335 56	\$554,744 35

* Includes \$13,447.85 received from sale of ferryboat "Governor Russell" and \$1,387.85 from sale of ferryboat "Hugh O'Brien."

† Remainder paid by Bridge Service.

‡ Includes employees (wages) after February 1, 1916, in office books.

§ Includes payment under Workmen's Compensation Act.

|| Includes repairs of coal carts, medical attendance, electric power, etc.

|||| Includes \$176.24 in hands of cashier.

||||| Includes \$598.59 received from sale of ferryboat "Noddle Island."

Total Expenditures Upon Ferries Since 1858-59.

Expenditures for avenues, paving, interest, etc., previous to the purchase of the ferries by the city	\$444,101 30
Purchase of the ferries, April, 1870	276,375 00
Expenditures for ferryboats since April, 1870,	2,178,182 01
Expenditures for new buildings, piers, drops, etc.	1,491,468 89
Expenditures for tools and fixtures (prior to 1910)	14,752 46
Expenditures for land from Lincoln's Wharf in 1887	5,562 52
Expenditures for land from Battery Wharf in 1893	10,000 00
Total expenditures on capital account	\$4,420,442 18
Expenditures for repairs of all kinds	2,592,713 60
Expenditures for fuel	2,790,968 89
Expenditures for salaries and wages	10,251,312 57
Expenditures for all other purposes	2,928,318 38
	<hr/>
	\$22,983,755 62

Total Receipts From Ferries Since 1858-59.

Receipts from rents, etc., previous to pur- chase of ferries	\$29,588 56
Receipts from ferry tolls since purchase of ferries	8,092,053 65
Receipts from rents since purchase of ferries,	72,354 40
Receipts from sale of ferryboats	168,001 73
Receipts from all other sources, per ferry books	33,953 23
Receipts from all other sources, additional, per City Auditor	30,734 85
Total receipts from all sources	\$8,426,686 42
Less amount with tollman as capital \$200 00	
Less amount in hands of cashier 176 24	
	<hr/>
	376 24
Total receipts, auditor's reports	\$8,426,310 18

**REGULAR ANNUAL (ORDINARY) AND SPECIAL APPROPRIATIONS
(EXTRAORDINARY) OF THE FERRY SERVICE FOR THE YEAR
ENDING DECEMBER 31, 1929.**

Appropriations (regular) for the year ending December 31, 1929	\$564,238 20
Transferred to Sanitary Service	9,493 85
	<hr/>
Amount of expenditures (regular) for the year,	\$554,744 35

SPECIAL APPROPRIATIONS.

East Boston Ferry, two additional boats and other permanent improvements:

Unexpended balance January 1, 1929 *\$106,993 05
Expenditures for year 1929 2,537 37

Unexpended balance December 31, 1929 \$104,455 68

Expenditures for year made up as follows:

Pay rolls, labor and engineering \$2,530 07
Travel expense 7 30

\$2,537 37

Ferry Improvements, etc.:

Unexpended balance January 1, 1929 \$18,224 54
Appropriation from taxes 20,000 00

\$38,224 54

Expenditures for year 1929 20,645 18

Unexpended balance December 31, 1929 \$17,579 36

Expenditures for the year made up as follows:

Wood blocks \$2,743 25
Sixteen rolled steel counterweight slabs 902 50
One drum hauling wench 1,950 00
Two gas boilers 1,263 35
Thermolier and boiler feeders 182 04
Gas piping for boilers 738 00
Thermostats 429 24
Cartage on heater 19 50

Amount paid to W. H. Ellis & Son Company, under contract for repairing piers at North and South Ferries 12,417 30

\$20,645 18

* \$50,000 authorized but not issued.

RECEIPTS AT EACH FERRY.

North Ferry.

FROM TOLLMEN.	From Foot Passengers.	From Tickets.	Totals.
Boston side.....	\$2,825 73	\$1,282 00	\$4,107 73
East Boston side.....	2,559 22	1,906 00	4,465 22
Totals.....	\$5,384 95	\$3,188 00	\$8,572 95

From tollmen	\$8,572 95
From gatemen:	
13,540 foot passengers at 1 cent	\$135 40
Cash fares for teams	5,804 96
	<u>5,940 36</u>

Total at North Ferry \$14,513 31

South Ferry.

FROM TOLLMEN.	From Foot Passengers.	From Tickets.	Totals.
Boston side.....	\$6,930 21	\$4,608 00	\$11,538 21
East Boston side.....	6,362 56	3,923 50	10,286 06
Totals.....	\$13,292 77	\$8,531 50	\$21,824 27

From tollmen	\$21,824 27
From gatemen:	
54,343 foot passengers at 1 cent	\$543 43
Cash fares for teams	31,834 20
	<u>32,377 63</u>

Total at South Ferry \$54,201 90

North and South Ferries	\$68,715 21
Tickets paid for at ferry office	2,990 10
Received in lieu of free ferries July 4, 1929	1 00

Total from rates	*\$71,706 31
Rents for the year	321 32
Headhouse privileges	400 00
Care of public telephone booths	44 00
Commission on public telephone	83 01
Old material sold	47 00
Sale of ferryboat "Noddle Island"	598 59

Total receipts for year * \$73,200 23

TRAVEL ON THE FERRIES FROM JANUARY 1, 1929,
TO DECEMBER 31, 1929, INCLUSIVE.

	North Ferry.	South Ferry.
Foot passengers at 1 cent each	552,035	1,383,620
Foot passengers by ticket	14,320	17,371
Total foot passengers	<u>566,355</u>	<u>1,400,991</u>

* Includes \$176.24 in hands of cashier.

	North Ferry.	South Ferry.
One-horse teams, light motor trucks, pleasure carriages and runabouts,	60,759	225,208
Two-horse pleasure carriages, hacks, and touring cars	70,734	376,166
Two-horse teams and motor trucks,	73,553	174,803
Three-horse teams and heavy motor trucks	1,383	2,280
Four-horse teams	21	763
Free teams, hacks and motor vehicles	8,479	23,012
	<u>214,929</u>	<u>802,232</u>

Motor Vehicle Traffic (Reports of Captains).

January 1, 1929, to December 31, 1929.

	North Ferry.	South Ferry.	Totals.
Runabouts.....	¹ 24,914	⁴ 126,088	151,002
Touring cars.....	² 87,355	⁵ 377,142	464,497
Trucks.....	³ 65,350	⁶ 189,815	255,165
Totals.....	177,619	693,045	870,664

¹ Includes 606 free.

² Includes 4,667 free.

³ Includes 2,931 free.

⁴ Includes 1,960 free.

⁵ Includes 11,641 free.

⁶ Includes 7,758 free.

Total paying foot passengers	1,967,346
Total foot passengers carried	<u>1,967,346</u>
Total paying teams	985,670
Total free teams	31,491
	<u>1,017,161</u>

TOTAL TRAVEL OF BOTH FERRIES FROM FEBRUARY 1, 1924,
TO DECEMBER 31, 1929.

	1924-25.	1925. (11 months.)	1926.	1927.	1928.	1929.
One-horse teams *.....	406,336	331,086	348,147	314,714	282,661	285,967
Two-horse teams †.....	291,710	222,543	263,763	248,351	231,782	248,356
Three-horse teams.....	1,249	736	1,868	3,422	3,472	3,663
Four-horse teams.....	2,105	1,514	2,380	1,303	755	784
Two-horse carriages, hacks ‡	338,031	290,361	365,540	397,600	407,335	446,900
Two-cent tolls, handcarts, etc.	3,098	2,282				
Drag wheels, etc.....	35					
Paid teams at both ferries,	1,042,564	848,522	981,698	965,390	926,005	985,670
Free teams at both ferries,	27,988	24,417	26,195	28,328	30,705	31,491
Total teams at both ferries.	1,070,552	872,939	1,007,893	993,718	956,710	1,017,161
Foot passengers paid....	2,844,317	2,298,192	2,418,209	2,293,232	2,176,249	1,967,346
Foot passengers free.....	1,584	270				
Total foot passengers,	2,845,901	2,298,462	2,418,209	2,293,232	2,176,249	1,967,346

NOTE.— Team travel includes automobiles.

* Includes one-seat automobiles. † Includes motor trucks. ‡ Includes two-seat automobiles.

APPENDIX C.

REPORT OF THE DIVISION ENGINEER OF THE
HIGHWAY DIVISION.

BOSTON, January 2, 1930.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,— I submit herewith a statement of the activities, operations and expenditures of the Paving and Lighting Services for the year ending December 31, 1929.

The maintenance expenditures of the Highway Division for the year were as follows:

Lighting Service	\$1,010,513 01
Paving Service	1,930,382 64
	<u>\$2,940,895 65</u>

PAVING SERVICE.

The division forces were employed in the maintenance of the streets throughout the city, resurfacing and repairing the macadam roadways, relaying the paving in the granite paved streets, and patching old sheet asphalt surfaces.

Sixty-six streets were resurfaced; the work done was nearly all of the type known as asphalt macadam.

During the year contracts were awarded to construct seventy-six new streets laid out under the "Highways, Making of," appropriation; the work on fourteen was not started.

Contracts were awarded to construct artificial stone sidewalks in thirty-six streets, nearly all of the work was completed at the end of the year.

For the repair and reconstruction of streets a contract was awarded for repairing bituminous pavement upon which the maintenance guaranty has expired. Contracts were awarded to reconstruct twenty-seven

streets and all but one was completed. In addition contracts were awarded for new street surfaces for the Exchange street and Causeway street widenings and the Nashua street widening and extension to Leverett street.

During the year the work of erecting street signs on the arterial thoroughfare streets, commenced in 1928, has been continued so that street signs are now installed to the Boston line in most cases.

Considerable progress has been made installing signs on cross-town streets connecting the main thoroughfares.

Signs have been installed on all streets constructed or reconstructed during the year.

LIGHTING SERVICE.

In and about Copley square twenty-one new twin 1,500 candle power mazda lamps were installed, making each unit 3,000 candle power.

The new construction in Nashua street, Cummins Highway and River street, Dorchester, required a new system of lighting which has been made by installing new 1,500 candle power mazda lamps on concrete posts in the suburban part of the city and the boulevard post in the city proper.

In addition to new lamps on Causeway street and Main street, Charlestown, a short type of boulevard post was installed so as to throw light under the elevated structure.

Respectfully,

JOSHUA ATWOOD,
Division Engineer.

HIGHWAY DIVISION — LIGHTING SERVICE.

FINANCIAL STATEMENT.

*Expenditures January 1, 1929, to December 31, 1929.**Electric Lighting:**Arc.*

Edison Electric Illuminating Company	\$446,812 25	
Charlestown Gas and Electric Company	24,384 70	
	<hr/>	\$471,196 95

Incandescent.

Edison Electric Illuminating Company	\$255,113 56	
Charlestown Gas and Electric Company	6,385 73	
Charlestown Gas and Electric Company fire alarm	363 21	
	<hr/>	261,862 50

Gas Lighting:

Boston Consolidated Gas Company	\$244,843 06	
Charlestown Gas and Electric Company	13,046 14	
Charlestown Gas and Electric Company fire alarm	597 02	
	<hr/>	258,486 22

Salaries and Wages:

Division engineer (part of)	\$1,333 33	
Clerk	2,400 00	
Lighting inspector	2,100 00	
	<hr/>	5,833 33

Automobile Expense:

Gasolene, oil, etc.	\$92 50	
Registration	3 00	
Shoes and tubes, new and repairs,	16 50	
Supplies	8 10	
Repairs	73 43	
Storage	64 74	
	<hr/>	258 27

<i>Carried forward</i>	<hr/>	\$997,637 27
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<i>Brought forward</i>	\$997,637	27
<i>Construction:</i>		
Installing lamps and posts and removing and relocating lamps and posts	9,444	66
<i>Office Expense:</i>		
Printing	\$79	75
Postage	36	00
Stationery and periodicals	83	55
		199 30
<i>Miscellaneous:</i>		
Travel expenses (car fares)	\$35	00
Typewriter repairs and inspection	12	00
Gas lamp posts and mazda posts,	3,115	96
Globes and shade frames	367	74
		3,530 70
Total	\$1,010,811	93
Less rebates on installations	298	92
Total	\$1,010,513	01

Revenue Credited to General Revenue.

Lighting Boston and Cambridge	
Bridges	\$133 86
Damage to posts	528 00
	\$661 86

The following is a statement of the work done during the year under the supervision of the Division Engineer.

In Copley square, city proper, twenty-one 3,000 candle power twin fixture mazda lamps have been installed.

Large street lamps, namely, arc, 1,500 candle power series mazda and 1,475 candle power multiple mazda have been installed on Nashua street, Middlesex street, State street, Exchange place, Buckingham street, Charles street, Causeway street, Boylston street, Appleton street, Atlantic avenue, Hanover street and Harrison avenue, city proper; East Cottage street, Savin Hill avenue, Topliff street, Dudley street, Columbia road, Freeport street, Dorchester avenue, Greenbrier street, Washington street, Ashton street, Morton street, Talbot avenue and Blue Hill avenue, Dorchester; Commonwealth avenue, Brighton; Lewis street, Paris street, Glendon street, Border street and Pope street, East Boston; Central avenue and Metropolitan avenue,

Hyde Park; Greenville street and Greenleaf street, Roxbury; Foundry street, Dorchester avenue, M street, Dorchester street, C street and Thomas park, South Boston; Centre street, Forest Hills square, Washington street and Cummins Highway, West Roxbury; Chapman street, George street, Main street, Bunker Hill street and Rutherford avenue, Charlestown.

The above lamps except those located in overhead districts are of the boulevard type.

Street lamps of the 600 candle power mazda type have been installed on Griggs street, Linden street, Ashford street, Leamington road, Gardner street, Foster street, Parsons street and Franklin street, Brighton; Allston street, city proper; Leonard street, Bowdoin avenue, Sydney street, Greenwood street, Walk Hill street, Vaughan avenue and Magnolia street, Dorchester; Gladstone street, East Boston; Central avenue and Station street, Hyde Park; Hawthorne street, Marcella street, Ellis street and Lawn street, Roxbury; Sedgwick street, Cottage avenue and La Grange street, West Roxbury.

During the year 165 pendant type posts were changed to the boulevard type.

Petitions and requests for new lamps received from citizens and from officials, also complaints in relation to the Lighting Service, have been investigated and attended to. All streets in the underground district prescribed for the year have been inspected and the necessary changes and additions have been made.

The number of miles of streets and ways lighted by this service is as follows:

Public streets and alleys	639.75
Public footways	1.43
Park roads, footways, private streets and alleys, approximately	306.19
	<hr/>
	947.37
	<hr/>

During the year the following defects were reported by the police: Arc lamps, 5,528; mazda lamps, 1,158, and gas lamps, 1,320.

There are in operation 22,302 arc, mazda and gas lamps, divided as follows: 4,672 arc, 7,597 mazda, 9,828 single mantle gas lamps and 205 single mantle fire alarm gas lamps.

LAMPS INSTALLED.

Magnetite arc lamps	88
Mazda lamps	1,401
Single mantle gas lamps	70
Single mantle gas lamps (fire alarm)	17
	<hr/>
	<u>1,576</u>

LAMPS DISCONTINUED.

Magnetite arc lamps	* 1,050
Mazda lamps	142
Single mantle gas lamps	123
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	<u>1,315</u>

* 1,026 Magnetite arc lamps changed to 1,500 candle power series mazda.

5 Magnetite arc lamps changed to 1,475 candle power multiple mazda

1 Magnetite arc lamp changed to 600 candle power series mazda.

The following table shows the work of setting, repairing and altering lamp posts, brackets, services, etc.

	Set for Lamps.	Set in Place of Broken Posts.	Shifted to New Location.	Straightened.	Reset to Line and Grade.	Unused Posts Removed.	Mazda Fixtures Removed.	Repaired.	Cleared.	Set in Place of Brackets.	Shades.
Arc posts (pendant).....	17	.....	2	.....	2	15	.....	.....	.....	.....	10
Mazda posts (pendant).....	67	.....	5	.....	.....	3	.....	.....	.....	.....	7
Concrete posts (Mazda).....	74	.....	.....	.....	.....	.....	.....	.....	.....	.....	8
Boulevard posts (arc).....	71	.....	12	.....	15	3	.....	.....	.....	.....	3
Boulevard posts (Mazda).....	47	.....	1	.....	1	.....	.....	.....	.....	.....	12
Mazda fixtures.....	102	.....	45	.....	.....	.....	103	.....	.....	.....	28
Gas posts.....	87	202	16	39	74	93	.....	102	108	.....	.....
Gas brackets.....	.....	.....	.....	.....	.....	2	.....	1	.....	.....	.....
Gas posts (for Mazda lamps)...	2	.....	1	.....	2	8	.....	.....	.....	.....	.....
Turned wood posts.....	1	.....	1	.....	.....	5	.....	.....	.....	.....	.....

The following table shows the number of lamps of various types in use on January 1, 1930, as compared with the number in use on January 1, 1929.

	January, 1930.	January, 1929.	Increase or Decrease.
Single mantle gas.....	9,828	9,881	53 Decrease
Fire alarm gas.....	205	188	17 Increase
Magnetite series.....	4,672	5,634	962 Decrease
Mazda.....	7,597	6,338	1,259 Increase
Totals.....	22,302	22,041	261 Increase

STREET LAMP OUTAGES.

Rebates for lamps not lighted on schedule time or out before the proper time have been received on the various monthly bills as follows:

DATE.	Arc.	Mazda.	Gas.
January, 1929.....	225.02	13.37	14.19
February.....	160.62	4.14	19.75
March.....	193.53	7.82	18.40
April.....	131.20	8.65	5.75
May.....	112.15	1.29	6.49
June.....	122.06	9.24	4.28
July.....	72.92	1.70	4.34
August.....	119.93	6.59	6.92
September.....	171.23	2.48	8.68
October.....	298.01	17.38	11.98
November.....	322.41	20.35	5.78
December.....	238.98	4.63	9.67
	2,168.06	97.64	116.23

GAS LIGHTING.

There are 9,828 single mantle gas lamps and 205 single mantle fire alarm gas lamps.

The city furnishes the lamp posts, the Gas Company sets the lamp posts and provides service pipes laid from the gas mains to the top of the posts, maintains all such pipes and posts in good condition and repair, furnishes gas, lanterns, burners and all other necessary equipment including labor for lighting and care.

The Lighting Service provides for the gas, lighting and care of fire alarm signal lamps and the Fire Department for the posts, setting and repairing of same.

Gas Lamps.

LIGHTING CONTRACT.	Gas District.	Number of Lamps.	Type of Lamp.	Rated Candle Power.	Gas Consumed per Hour.	Hours of Burning per Annum.	Cost of Gas per Lamp per Annum.	Cost per Lamp for Lighting and Care per Annum.	Total Cost per Lamp per Annum.
Boston Consolidated Gas Company.*	South Boston, East Boston, Dorchester, Roxbury, Brighton, West Roxbury.	9,326 181	Single mantle. Single mantle. F. A.	60 60	3 feet. 3 feet.	3,886.45 3,886.45	\$10 54 10 54	\$15 20 15 20	\$25 74 25 74
Charlestown Gas and Electric Company.†	Charlestown.....	502 24	Single mantle. Single mantle. F. A.	60 60	3 feet. 3 feet.	3,886.45 3,886.45	10 69 10 69	15 20 15 20	25 89 25 89

Ten year contract approved May 20, 1924.

* The Boston Consolidated Gas Company reduced the price of gas 16 $\frac{2}{3}$ per cent, dating from October 1, 1929.

† The Charlestown Gas and Electric Company reduced the price of gas 16 $\frac{2}{3}$ per cent, dating from November 1, 1929. This explains the reduction in cost from the original contract price of \$11 per lamp per year.

There are 4,672 magnetite arc lamps, 384 40 candle power, 231 40 candle power, multiple, two bulb fire alarm lamps, 1,543 66 candle power, 3,143 80 candle power, 49 100 candle power, 81 132 candle power, 36 250 candle power, 12 528 candle power, 73 600 candle power, 23 950 candle power, 15 1,000 candle power, 156 1,475 candle power, 1,830 1,500 candle power, and 21 3,000 candle power twin fixture mazda lamps.

The electric companies provide and set the lamp posts, except the lamp posts for mazda lamps smaller than 528 candle power, multiple or 600 candle power series circuits supplied from underground circuits, furnish lamps, overhead wires, underground conduits, cables and connections and all other necessary equipment and maintain same in good condition and repair.

The lighting rates for electric lamps are in accordance with the following table:

DESCRIPTION OF LAMPS.	Fixed Costs per Lamp per Year.	Running Cost per Lamp Hour.
1,500 candle power Magnetite arc, series	\$36 00	1.50 cents
40 candle power Mazda lamp, series *.	10 00	.22 cent
40 candle power Mazda lamp, multiple †.	10 80	.26 cent
66 candle power Mazda lamp, multiple	10 80	.26 cent
80 candle power Mazda lamp, series.	10 80	.26 cent
100 candle power Mazda lamp, series.	12 00	.30 cent
132 candle power Mazda lamp, multiple.	13 50	.36 cent
250 candle power Mazda lamp, series.	18 00	.60 cent
528 candle power Mazda lamp, multiple.	31 00	1.00 cent
600 candle power Mazda lamp, series.	31 00	1.00 cent
950 candle power Mazda lamp, multiple.	32 00	1.30 cents
1,000 candle power Mazda lamp, series.	32 00	1.30 cents
1,475 candle power Mazda lamp, multiple.	36 00	1.50 cents
1,500 candle power Mazda lamp, series.	36 00	1.50 cents
3,000 candle power Mazda lamp, series ‡.	50 00	3.00 cents

* This is the single bulb fire alarm lamp.

† This is the two bulb fire alarm lamp.

‡ This is the twin fixture lamp on boulevard posts.

A deduction at the rate of 1 cent per hour for lamps of 100 candle power or less and 5 cents per hour for all other lamps is made for outage.

Arc Lamps.

COMPANY.	Number of Lamps.	Type of Lamps.	Type of Circuit.	Candle Power.	Terminal.	Lighting Hours per Annum.	Cost of Lamp per Annum.
Edison Electric Illuminating Company.....	4,521	Magnetite..	Series 6.6 amp. D. C....	1,500	528	3,828	\$93 42
Charlestown Gas and Electric Company.....	151	Magnetite..	Series 6.6 amp. D. C....	1,500	528	3,828	93 42

NOTE.—In the above the candle power is the official designation. The wattage figures are eliminated.

Mazda Lamps.

COMPANY.	Number of Lamps.	Type of Lamps.	Type of Circuits.	Candle Power.	Lighting Hours per Annum.	Cost of Lamp per Annum.
Edison Electric Illuminating Company.....	384	Mazda.	Series 6.6 amp. D. C.	40	3,828	\$18 42
	231	Mazda (twin).	Multiple.	40	3,828	20 75
	1,543	Mazda.	Multiple.	66	3,828	20 75
	3,125	Mazda.	Series 6.6 amp. D. C.	80	3,828	20 75
	49	Mazda.	Series 6.6 amp. D. C.	100	3,828	23 48
	81	Mazda.	Multiple.	132	3,828	27 28
	36	Mazda.	Series 6.6 amp. D. C.	250	3,828	40 97
	12	Mazda.	Multiple.	528	3,828	69 28
	73	Mazda.	Series 6.6 amp. D. C.	600	3,828	69 28
	23	Mazda.	Multiple.	950	3,828	81 76
	156	Mazda.	Multiple.	1,475	3,828	93 42
	1,637	Mazda.	Series 20 amp. A. C.	1,500	3,828	93 32
	21	Mazda (twin).	Series 20 amp. A. C.	3,000	3,828	164 84
	18 F. A.	Mazda.	Series 6.6 amp. D. C.	80	3,828	20 75
	15	Mazda.	Series 20 amp. A. C.	1,000	3,828	81 76
Charlestown Gas and Electric Company.....	193	Mazda.	Series 20 amp. A. C.	1,500	3,828	93 42

NOTE.—In the above the candle power is the official designation. The wattage figures are eliminated.

The following tables show a comparison of the number of lamps of various types; also candle power and cost for the years of 1928 and 1929.

Street Lamps in Service December 31, 1928.

NUMBER.	Type.	Unit Candle Power.	Total Candle Power.	Cost of Burning.
5,634.....	Arc.	1,500	8,451,000	\$552,292 13
599.....	Mazda.	40	23,960	151,526 24
1,544.....	Mazda.	66	101,904	
3,145.....	Mazda.	80	251,600	
43.....	Mazda.	100	4,300	
79.....	Mazda.	132	10,428	
32.....	Mazda.	250	8,000	
12.....	Mazda.	528	6,336	
2.....	Mazda.	600	1,200	
23.....	Mazda.	950	21,850	
15.....	Mazda.	1,000	15,000	
122.....	Mazda.	1,475	179,950	
722.....	Mazda.	1,500	1,083,000	
10,069.....	Gas.	60	604,140	263,569 05
22,041.....	10,762,668	\$967,387 42

Average cost per lamp per year, \$43.89.

Average cost per candle power per year, \$0.089883.

Street Lamps in Service December 31, 1929.

NUMBER.	Type.	Unit Candle Power.	Total Candle Power.	Cost of Burning.
4,672.....	Arc.	1,500	7,008,000	\$471,196 95
615.....	Mazda.	40	24,600	
1,543.....	Mazda.	66	101,838	
3,143.....	Mazda.	80	251,440	
49.....	Mazda.	100	4,900	
81.....	Mazda.	132	10,692	
36.....	Mazda.	250	9,000	
12.....	Mazda.	528	6,336	
73.....	Mazda.	600	43,800	
23.....	Mazda.	950	21,850	
15.....	Mazda.	1,000	15,000	
156.....	Mazda.	1,475	230,100	
1,830.....	Mazda.	1,500	2,745,000	
21.....	Mazda.	3,000	63,000	
10,033.....	Gas.	60	601,980	258,486 22
22,302.....	11,137,536	\$991,545 67

Average cost per lamp per year, \$44.45.

Average cost per candle power per year, \$0.089027.

FINANCIAL STATEMENT.—PAVING SERVICE.

MAINTENANCE.

Appropriations from taxes	\$1,938,343 28
Transferred from Central Office	\$224 37
Transferred from Lighting Service,	3,914 99
	<u>4,139 36</u>
	\$1,942,482 64
Transferred to Sanitary Service	12,100 00
	<u>\$1,930,382 64</u>
Expended during the year	<u>\$1,930,382 64</u>

SPECIAL APPROPRIATIONS.

Highways, Making of:

Amount expended during the year	<u>\$732,049 23</u>
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DEPARTMENTAL EQUIPMENT.

Balance January 1, 1929	\$2,464 84
Expended during the year	2,326 50
	<u>\$138 34</u>

GARAGE, HANCOCK STREET YARD.

Balance January 1, 1929	\$355 52
Expended during the year	0 00
	<u>\$355 52</u>

GRANOLITHIC SIDEWALKS.

Balance January 1, 1929	\$35,092 60
Appropriation from taxes	75,000 00
Loan, inside of debt limit	50,000 00
	<u>\$160,092 60</u>
Expended during the year	135,430 41
	<u>\$24,662 19</u>

KNEELAND STREET IMPROVEMENT.

Expended during the year	<u>\$110 00</u>
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LOWELL STREET, NASHUA STREET AND CAUSEWAY STREET.

Expended during the year	<u>\$122,446 83</u>
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MORTON STREET IMPROVEMENT.

Expended during the year	<u>\$21,747 46</u>
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OAKLAND AND ASHLAND STREETS IMPROVEMENT.

Expended during the year	<u>\$83,273 33</u>
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PERMANENT STREET PAVEMENT.

Balance January 1, 1929	\$7,149 70
Expended during the year	<u>5,269 47</u>

Balance December 31, 1929	<u>\$1,880 23</u>
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RECONSTRUCTING AND REPAIRING STREETS BY CONTRACT.

Balance January 1, 1929	\$99,989 64
Appropriation from taxes	<u>750,000 00</u>

	<u>\$849,989 64</u>
Expended during the year	<u>803,938 58</u>

Balance December 31, 1929	<u>\$46,051 06</u>
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RIVER STREET RECONSTRUCTION.

Expended during the year	<u>\$143 35</u>
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STREET SIGNS.

Balance January 1, 1929	\$1,352 98
Appropriation from taxes	<u>20,000 00</u>

	<u>\$21,352 98</u>
Expended during the year	<u>11,499 92</u>

Balance December 31, 1929	<u>\$9,853 06</u>
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PAVING SERVICE.

SUMMARY OF EXPENDITURES.

Paving Service, maintenance	\$1,930,382 64
Highways, making of	732,049 23
Departmental equipment	2,326 50
Granolithic sidewalks	135,430 41
Kneeland street improvement	110 00
Lowell street, Nashua street and Causeway street	122,446 83
Morton street improvement	21,747 46
Oakland and Ashland streets improvement	83,273 33
Permanent street pavement	5,269 47
Reconstructing and repairing streets by contract,	803,938 58
River street reconstruction	143 35
Street signs	11,499 92
Total	<u>\$3,848,617 72</u>

INCOME.

Statement showing the amount of bills and cash deposited with the City Collector from January 1, 1929, to December 31, 1929, and credited to General Revenue.

Edgestone and sidewalk assessments	\$41,041 87
Permits	24,816 41
Labor, materials furnished, etc.	6,765 22
Total	<u>\$72,623 50</u>

AMOUNT PAID INTO THE CITY TREASURY
DURING THE YEAR.

Edgestone and sidewalk assessments	\$28,665 66
Permits	24,322 91
Labor, materials furnished, etc.	6,243 38
Total	<u>\$59,231 95</u>

HIGHWAY DIVISION — PAVING SERVICE.

Work Done by Contract, 1929.

	Old.	New.	Total Old and New.
Edgestone set.....	67,960 linear feet.	115,160 linear feet.	183,120 linear feet.
Crushed stone foundation for edgestone.....	.....	23,684 " "	23,684 " "
Concrete base laid.....	4,706 square yards.	229,447 square yards.	234,153 square yards.
Granite block paving laid, gravel base, gravel joints.....	5,218 " "	516 " "	5,734 " "
Recut granite blocks laid, grout joints.....	17,904 " "	37,564 " "	55,468 " "
Sheet asphalt and binder laid.....	766 " "	176,905 " "	177,671 " "
Bitulithic pavement laid.....	348 " "	92,459 " "	92,807 " "
Bituminous patching contract:			
1. Full depth asphalt.....	24,803 " "	22,455 " "	47,258 " "
2. Full depth bituminous concrete.....	12,799 " "	.....	12,799 " "
3. Surface work.....	15,575 " "	.....	15,575 " "
4. Extra binder.....	129 tons.	.....	129 tons.
5. Cement concrete base.....	393 square yards.	603 square yards.	996 square yards.
Concrete pavement laid.....	.....	6,107 " "	6,107 " "
Wood block pavement laid.....	112 square yards.	.....	112 " "
Asphalt macadam laid.....	.....	12,162 square yards.	12,162 " "
Extra binder.....	.....	56 tons.	56 tons.
Artificial stone sidewalks laid.....	8,530 square yards.	135,665 square yards.	144,225 square yards.

Brick sidewalks laid.....	3,023	"	"	190	"	"	3,213	"	"
Crushed stone sidewalks laid.....	132	"	"	9,218	"	"	9,350	"	"
Cinder sidewalks laid.....				1,259	"	"	1,259	"	"
Artificial stone foundation placed.....	2,335	square yards,		55,769	"	"	58,104	"	"
Steel reinforcement laid.....				52,964	pounds,		52,964	pounds,	
Earth excavation.....				99,379	cubic yards,		99,379	cubic yards,	
Filling furnished.....				11,338	"	"	11,338	"	"
Crushed stone furnished.....				10,191	tons,		10,191	tons,	
Loam furnished.....				1,135	cubic yards,		1,135	cubic yards,	
Loam graded and seeded.....				384	square yards,		384	square yards,	
Covers set to grade, also bradley heads and basins.....				1,159	"	"	1,159	"	"
Wooden fence erected.....				2,670	linear feet,		2,670	linear feet,	
Chain link fence erected.....				100	"	"	100	"	"
Iron fence erected.....				778	"	"	778	"	"
Pipe drain.....				2,967	"	"	2,967	"	"
Dry wells constructed.....				4	"	"	4	"	"
Concrete walls erected.....				1,707	cubic yards,		1,707	cubic yards,	
Walls removed.....				1,832	"	"	1,832	"	"
Telford base removed.....				102	square yards,		102	square yards,	
Rock excavation.....				2,387	cubic yards,		2,387	cubic yards,	
Concrete base removed.....				5,054	square yards,		5,054	square yards,	

Work Done by Paving Service Forces During 1929.

	Old.	New.	Total.
Edgestone set.	32,331 linear feet.	6,501 linear feet.	38,831 linear feet.
Concrete base laid.	2,522 square yards.	.....	2,522 square yards.
Roadway, granite block, gravel joints.	4,663 " " "	.....	4,663 " " "
Roadway, granite block, grout joints.	31,234 " " "	18 square yards.	31,252 " " "
Gutter, granite block, gravel joints.	8,930 " " "	334 " " "	9,264 " " "
Gutter, granite block, grout joints.	2,024 " " "	106 " " "	2,130 " " "
Flagging crosswalk, gravel joints.	394 " " "	.....	394 " " "
Roadway, wood block, sand joints.	3,764 " " "	.....	3,764 " " "
Asphalt penetration macadam surface placed. ....	.....	206,263 square yards.	206,263 " " "
Macadam surface patched.	438,223 square yards.	.....	438,223 " " "
Asphalt blanket coat.	21,424 " " "	.....	21,424 " " "
Sheet asphalt surface patched *.	2,000 " " "	.....	2,000 " " "
Sheet asphalt surface patched †.	8,702 " " "	.....	8,702 " " "
Brick sidewalks laid.	58,480 " " "	816 square yards.	59,296 " " "
Artificial stone sidewalks laid.	9,838 " " "	1,390 " " "	11,228 " " "
Sidewalk excavating, no sidewalks laid. ....	.....	218 " " "	218 " " "
Gravel or crushed stone sidewalks surfaced.	141,601 square yards.	.....	141,601 " " "
Roadway excavating, no roadway constructed.	50 cubic yards.	.....	50 cubic yards.
Roadway excavating, roadway changed.	1,187 " " "	.....	1,187 " " "
Grading (no pavement laid).	7,119 square yards.	.....	7,119 square yards.
Brick block pavement laid.	2,116 " " "	.....	2,116 " " "
Concrete roadway laid.	47 " " "	.....	47 " " "
New style sign posts erected. ....	.....	764	764
Tar sidewalks patched. ....	.....	1,900	1,900
Rock excavating. ....	.....	321	321

* Patched with asphalt mixture from Brighton asphalt plant.

† Patched with bituroc, kyrock, emulsified asphalt and stone, taric compound and stone, etc.

Objects of Expenditures from the Various Appropriations, Classified by Districts, from January 1, 1929, to
December 31, 1929.

Districts.	Macadam Repairs.	Paved Street Repairs.	Removal of Snow.	Street Cleaning.	Edgestone and Sidewalk Repairs.	Street Work.	Schedule A Miscella- neous.	Totals.
South Boston and Dorchester North.....	\$10,746 26	\$12,363 53	\$49,309 12	\$5,453 59	\$8,857 49	\$114,824 81	.....	\$201,554 80
East Boston and Breed's Island.....	24,477 64	486 06	14,431 92	3,125 68	13,316 18	105,708 43	.....	161,545 91
Charlestown.....	6,202 72	3,792 88	16,408 73	5,253 41	8,346 49	15,801 70	.....	55,805 98
Brighton.....	47,190 85	773 36	21,575 97	29,950 25	11,745 51	203,049 58	.....	314,285 52
West Roxbury.....	43,531 73	5,068 71	35,156 66	28,172 33	9,106 93	412,463 45	.....	533,499 81
Dorchester.....	29,541 98	4,128 49	16,183 42	13,528 96	15,812 57	112,565 76	.....	191,761 18
Roxbury South and Jamaica Plain.....	41,821 48	1,420 66	54,618 43	57,504 44	24,686 43	197,277 61	.....	377,329 05
City Proper.....	37,828 20	23,965 14	176,604 29	141 17	45,654 61	358,083 83	.....	642,277 24
Ashmont.....	30,115 35	562 90	16,106 50	7,601 87	11,151 40	465,151 48	.....	530,689 50
Hyde Park.....	20,575 60	.....	18,378 08	15,064 50	1,626 64	33,001 37	.....	88,646 19
Miscellaneous.....	.....	.....	.....	.....	.....	* 157,571 94	† \$593,650 60	751,222 54
Totals.....	\$292,031 86	\$52,561 73	\$418,773 12	\$165,796 20	\$150,304 25	\$2,175,499 96	\$593,650 60	\$3,848,617 72

* Includes street signs, \$11,499.92; departmental equipment, \$2,326.50; artificial stone sidewalk rebates, \$15,119.51 and asphalt and bitulithic repairs, \$128,626.01.

† Includes artificial stone sidewalk repairs, \$32,064.45; asphalt and bitulithic repairs, \$10,390.86 and wood and brick block pavement repairs, \$11,501.48.

SCHEDULE A.

EXPENDITURES FOR FISCAL YEAR 1929.

Salary of division engineer (part of)	\$3,750 00
Salaries of office clerks and stenographers	11,718 76
Salaries of assistant engineers (office work)	24,527 19
Salaries of permit office clerks	14,104 86
Salaries of permit office inspectors	18,771 02
Salaries of engineering inspectors (office work)	17,096 83
Salaries of district inspectors	4,056 57
Salary of medical inspector (part of)	400 00
Medical attendance on injured employees (outside)	985 82
Salary of general foreman	3,359 56
Salary of chief veterinarian (part of)	500 00
Salary of inspector of horses	1,600 00
Pensions paid to veterans (retired)	3,260 59
Pensions paid to laborers (retired)	9,928 75
Compensation allowed injured employees	4,663 72
Vacations allowed laborers, mechanics, etc.	39,971 13
Holidays not including holidays charged to street accounts	95,365 57
Military duty	78 00
Postage	368 71
Printing	3,876 96
Stationery	655 02
Traveling expenses, car fares, etc.	1,163 42
Engineering supplies and incidentals	3,134 79
Stationery	\$706 14
Printing	743 85
Postage	135 38
Transit repairs	62 49
Miscellaneous	1,486 93
Supplies, etc., for laboratory	297 13
Artificial stone sidewalks, new and repairs by department force. (See reconstructing and repairing streets by contract)	32,064 45
Asphalt and bitulithic pavement repairs. Temporary repairs, labor, teaming materials. (See reconstructing and repairing streets by contract)	10,390 86
Brick block repairs, labor, teaming, materials	3,772 40
Wood block repairs, labor, teaming, materials	7,729 08
Crosswalks repaired, not included elsewhere	156 45
<i>Carried forward</i>	<u>\$317,747 64</u>

<i>Brought forward</i>	\$317,747 64
Fence repairs	5,975 79
Plankwalk repairs	1,563 61
Edgestone, sidewalks and gutters (new) not included elsewhere	17,589 19
Rent of land, wharves, etc.	4,951 00
Taxes	352 80
Expense of stables, including drivers, feeders, fodder, horse-shoeing, repairs to harnesses, wagons, carts, etc.	\$125,381 04
Amount earned by department teams	93,197 63
	<hr/>
	32,183 41
Electric lighting at yards and stables	1,563 26
Gas lighting at yards and stables	240 94
Fuel, for heating offices, buildings and stables	3,716 71
Electric appliances, labor and materials, yards and stables	15 38
Rent of towels	178 20
Stoves, pipes, grates, etc.	130 27
Telephone rentals and tolls	2,233 72
Ice	124 38
Signs, making, repairing, putting up, etc.	26,185 24
Tools, hardware, etc., new, cost of repairing, etc.,	29,184 31
Oil for lighting around defects, etc.	1,479 12
Expenses of yards, including salaries of foreman, clerks, yardmen, watchmen, tool wagons, etc.,	67,677 65
Repairs of yard buildings, stables, sheds, shanties, etc.	17,836 63
Sanding icy and slippery streets	13,273 99
Repairing wharf at 521 Commercial street	3,560 23
Chests for Central Office, making of	5 75
Premium on surety bonds	18 00
Traverse street subway	2,107 50
Adding machine	125 00
Repairs to and inspection of typewriters and adding machines	60 00
Repairs to snow dump	180 33
Work done and materials furnished, individuals, corporations, etc.	3,498 40
Miscellaneous	3,677 38
Photographs	93 00
Work done and materials furnished other services,	4,158 30
Meals	12 25
Removing old shed (Southampton street)	544 50
Gas rollers, Buffalo, Pitts	13,900 00
Placing lanterns on silent policemen	3,324 61
	<hr/>
<i>Carried forward</i>	\$597,468 49

<i>Brought forward</i>		\$597,468 49	
Automobiles and trucks, 6 automobiles, 3 trucks,		18,554 00	
Stone crusher, South End District, operating supplies, etc.		674 48	
Garage, Albany street, employees' wages, fuel, gasolene, supplies, repairs, etc.		47,674 83	
Garage, Hancock street employees' wages fuel, gasolene, supplies, repairs, etc.		15,001 29	
Steam and gas rollers:			
Cost of operating, repairs, sup- plies, etc.	\$32,387 67		
Amount earned	25,758 75		
		6,628 92	
Concrete mixers, snow loaders and tractors	\$9,657 30		
Amount earned	8,561 00		
		1,096 30	
Total		\$669,098 31	
Credits:			
Automobiles:			
Amount earned by trucks	\$196,805 00		
Cost of operation, repairs, supplies, equipment	130,087 35		
		\$66,717 65	
Asphalt plant, Brighton:			
Value of material used on streets	\$40,047 76		
Operating expenses, repairs, etc.	34,566 54		
		5,481 22	
Stock:			
Materials delivered on streets,	\$146,333 24		
Cost of materials, \$119,358 44			
Labor handling and teaming	23,725 96		
	143,084 40		
		3,248 84	
		75,447 71	
Total		\$593,650 60	

Snow and Ice Removed by Contract from January 1, 1929, to December 31, 1929.

District.	Contractor.	Number of Loads.	Cubic Yards.	Cost per Cubic Yard.	Total Cost.	Remarks.
1.....	Hugh Nawn, Inc.....	3,242 No work.	38,365	\$0 48 0 48	\$18,415 20	1928 contract. 1929 contract.
2.....	Coleman Brothers, Inc. Leo J. Nawn, Inc.	1,037 No work.	7,980	0 50 0 48	3,990 00	1928 contract. 1929 contract.
3.....	John J. Grant..... B. E. Grant Company	1,980 No work.	18,135	0 55 0 55	9,974 25	1928 contract. 1929 contract.
4.....	John J. Grant..... B. E. Grant Company	2,686 No work.	27,660	0 54 0 54	14,926 40	1928 contract. 1929 contract.
5.....	Joseph P. McCabe Joseph P. McCabe	1,443 No work.	11,964	0 49 0 45	5,867 27	1928 contract. 1929 contract.
6.....	A. G. Tomasello & Son, Inc. A. G. Tomasello & Son, Inc.	1,685 No work.	15,084	0 70 0 65	10,559 15	1928 contract. 1929 contract.
7.....	C. M. Callahan, Inc. Ormac Company	2,287 No work.	23,466	0 50 0 49	11,733 00	1928 contract. 1929 contract.
8.....	Joseph B. O'Rourke J. C. Coleman & Sons Company.	3,532 No work.	83,049	0 55 0 35	18,176 95	1928 contract. 1929 contract.
9.....	Thomas Joseph McCue F. J. Jacobs & Son	2,142 No work.	16,595	0 45 0 45	7,467 75	1928 contract. 1929 contract.
10.....	Coleman Brothers, Inc. Coleman Brothers, Inc.	6,236 No work.	49,541	0 43 0 48	21,732 64	1928 contract. 1929 contract.
11.....	Coleman Brothers, Inc. C. M. Callahan, Inc.	1,590 No work.	20,183	0 45 0 45	9,082 35	1928 contract. 1929 contract.
12.....	David W. Norton Coleman Brothers, Inc.	1,328 No work.	10,746	0 48 0 48	5,158 08	1928 contract. 1929 contract.
13.....	D. M. Biggs Company	773	6,924	0 60	4,154 70	1928 contract.
14.....	Ormac Company	630	2,598	0 60	2,758 80	1928 contract.
15.....	A. G. Tomasello & Son, Inc.	403	3,228	0 60	1,937 10	1928 contract.

**The Number of Loads of Snow Removed by Department Forces
from January 1, 1929, to December 31, 1929.**

DISTRICT.	Single.*	Double.†	Auto Truck.‡	Cubic Yards.	Cost. §
South Boston.....			1,886	11,316	\$18,493 13
East Boston.....	1,359	618	870	9,792	14,431 92
Charlestown.....	1,700			3,400	11,250 65
Brighton.....			3,278	19,668	21,575 97
West Roxbury.....	768	1,766	1,985	18,744	35,156 66
Dorchester.....	489	268	2,693	17,940	16,183 42
Roxbury.....	2,215	970	1,420	15,860	50,463 73
City Proper	283		6,297	38,348	64,491 34
Ashmont.....	1,111	724	894	9,758	16,106 50
Hyde Park.....	674	444	3,214	21,964	18,378 08
Totals.....	8,599	4,790	22,537	166,790	\$266,531 40

* Single loads, 2 cubic yards.

† Double loads, 3 cubic yards.

‡ Auto truck loads, 3 cubic yards to 14 cubic yards.

§ Includes cost of plowing gutters, cleaning sidewalks and picking ice not carted away.
Also automobile snow plows furnished by contractors.

**Loads of Dirt and Street Cleaning Removed from January 1, 1929,
to December 31, 1929.**

DISTRICT.	Single.*	Double.†	Auto Truck.‡	Cubic Yards, Total.
South Boston.....	27	—	1,656	9,990
East Boston.....	360	—	141	1,566
Charlestown.....	464	—	—	928
Brighton.....	—	—	2,743	16,458
West Roxbury.....	997	1,452	978	12,218
Dorchester.....	14	—	309	1,882
Roxbury.....	2,830	1,460	920	15,560
City Proper.....	—	—	—	—
Ashmont.....	1,155	91	117	3,285
Hyde Park.....	908	92	186	3 208
Totals.....	6,755	3,095	7,050	65,095

* Single loads, 2 cubic yards.

† Double loads, 3 cubic yards.

‡ Auto truck loads, 6 cubic yards.

New Edgestone and Brick Sidewalk Recapitulation for 1929.

DISTRICT.	Edgestone, Linear Feet.	Brick Sidewalk, Square Yards.
South Boston, Paving District, No. 1.....	22	73
East Boston, Paving District, No. 2.....	342	80
Charlestown, Paving District, No. 3.....	—	—
Brighton, Paving District, No. 4.....	1,719	—
West Roxbury, Paving District, No. 5.....	999	—
Dorchester, Paving District, No. 6.....	877	—
Roxbury, Paving District, No. 7.....	1,227	663
City Proper.....	605	—
Ashmont, Paving District, No. 9.....	446	—
Hyde Park, Paving District, No. 11.....	264	—
Totals.....	6,501	816

New Granolithic Sidewalks Laid by Department Forces
During 1929.

DISTRICT.	Square Feet.	Location of Work.
South Boston.....	9,396	East Fourth street, Farragut road.
East Boston.....	—	
Charlestown.....	—	
Brighton.....	—	
West Roxbury.....	708	Pond street.
Dorchester.....	—	
Roxbury.....	—	
City Proper.....	2,227	Dewey square, Park square, Clark street.
Ashmont.....	—	Harrison avenue, Fulton street, Emerald street.
Hyde Park.....	180	Hyde Park avenue, Maple street.
Total.....	12,511	

PUBLIC WORKS DEPARTMENT — HIGHWAY DIVISION — PAVING SERVICE.

Maintenance of Macadam Streets.

Cost by Years of Resurfacing or Patching from February 1, 1925, to December 31, 1929.

	1925. ¹	1926. ²	1927. ²	1928. ²	1929. ²
Total length of macadam in miles.....	343.50	340.24	335.62	330.46	326.24
Total area of macadam in square yards.....	5,708,269	5,629,035	5,563,377	5,471,879	5,371,587
Total cost of resurfacing of macadam*.....	\$111,541 74	\$100,246 23	\$119,795 43	\$177,690 43	\$193,315 32
Total cost of patching of macadam †.....	\$231,916 92	\$305,664 95	\$299,546 48	\$316,233 52	\$292,031 86
Cost of resurfacing per mile over entire mileage.....	\$324 72	\$204 64	\$356 94	\$537 71	\$592 56
Cost of resurfacing per square yard over entire area.....	\$0 0195	\$0 0178	\$0 0215	\$0 0325	\$0 0359
Length of macadam resurfaced yearly in miles.....	4.939	4.893	6.6506	9.692	10.429
Cost per mile of macadam resurfaced yearly.....	\$22,583 89	\$20,487 64	\$18,012 73	\$18,333 72	\$18,536 32
Area of macadam resurfaced yearly in square yards.....	82,648	67,419	89,569	128,495	153,178
Cost per square yard of macadam resurfaced yearly.....	\$1 34	\$1 49	\$1,337	\$1,383	\$1 26
Area of macadam patched yearly in square yards.....	329,801	450,702	479,544	467,731	487,079
Cost per square yard of macadam patched yearly.....	\$0 703	\$0 678	\$0 625	\$0 65	\$0 599
Binders used in resurfacing (per cent):					
Water.....	.0000	.0000	.0000	.0000	.0000
Tax preparation.....	.0084	.0000	.0000	.0000	.0000
Asphalt preparations.....	.9916	1.0000	1.0000	1.0000	1.0000

* By resurfacing is meant entire area of street excavated and resurfaced with not less than four inches of new material.

† By patching is meant scattered areas of depressions, etc., which are filled with new material from a depth of one half inch up, and in some cases blanket coated with bituminous binder. 465,655 square yards patched; 21,424 square yards asphalt blanket coat.

¹ 1925 — from February 1 to December 31 — eleven months.² 1926, 1927, 1928, 1929 — from January 1 to December 31.

PUBLIC WORKS DEPARTMENT.

HIGHWAY DIVISION - PAVING SERVICE - DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "GRANOLITHIC SIDEWALKS."

No.	STREET.	From	To	Contractor.	Payment.	Length, Linear Feet.	Area, Square Feet.	Total Cost.	Amount Paid to Contractor.	MATERIALS.				EXPENSES.				WORK DONE.										Progress.		
										EDGESTONE.		GRANITE BLOCK.		SIDEWALK BRICK.		MISCELLANEOUS.		Bummer.	Inspection.	Traveling, etc.	Advertising.	Machine.	Excavation and Filling.	Erecting Road.	Brick Sidewalk and Road.	Paving and Braking.	Artificial Stone.		Machine.	
										Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.													
1	Adams street.	In front of Nos. 252, 254, 256.	Spring Park avenue.	Leo J. Naven.	Artificial stone walks.	...	...	\$277 94	\$277 94																			Work done in 1928.	1
2	Adams street.	Baytown street.	Spring Park avenue.	Appel & O'Toole.	Artificial stone walks.	...	...	280 140	279 150																			Work done in 1928.	2
3	Albion street.	Brigton avenue.	Cummunawatch avenue.	R. Penavalle & Co.	Artificial stone walks.	...	...	983 06	651 86																			Work not done.	3
4	Albion street.					...	...	56 40	...																			Work not done.	4
5	Ambley street.			Pompeo Silvieri.	Artificial stone walks.	265	1,925	27 60	...																			Work not done.	5	
6	Ambley street.	South side of Hyde Park avenue.		S. J. Tomasello.	Artificial stone walks.	985	8,461	4,101 05	2,815 02	1,187 24																		Work not done.	6	
7	Ambley street.	Albion street.		J. J. McCarthy.	Artificial stone walks.	1,853	72	1,490 27	441 52																			Work not done.	7	
8	Ambley street.	Albion street.		Perini & Peinosa.	Artificial stone walks.	1,863	31,640	3,419 50	2,981 27	290 34																		Work not done.	8	
9	Ambley street.	Albion street.		T. J. Kelly.	Artificial stone walks.	...	...	43 61	...																			Work not done.	9
10	Ambley street.	Albion street.		Martino DeMatteo.	Artificial stone walks.	...	...	737 30	736 54	52 47																		Work not done.	10
11	Ambley street.	Albion street.				...	...	...	...																			Work not done.	11
12	Ambley street.	Albion street.				...	...	...	...																			Work not done.	12
13	Ambley street.	Albion street.				...	...	...	...																			Work not done.	13
14	Ambley street.	Albion street.				...	...	...	...																			Work not done.	14
15	Ambley street.	Albion street.				...	...	...	...																			Work not done.	15
16	Ambley street.	Albion street.				...	...	...	...																			Work not done.	16
17	Ambley street.	Albion street.				...	...	...	...																			Work not done.	17
18	Ambley street.	Albion street.				...	...	...	...																			Work not done.	18
19	Ambley street.	Albion street.				...	...	...	...																			Work not done.	19
20	Ambley street.	Albion street.				...	...	...	...																			Work not done.	20
21	Ambley street.	Albion street.				...	...	...	...																			Work not done.	21
22	Ambley street.	Albion street.				...	...	...	...																			Work not done.	22
23	Ambley street.	Albion street.				...	...	...	...																			Work not done.	23
24	Ambley street.	Albion street.				...	...	...	...																			Work not done.	24
25	Ambley street.	Albion street.				...	...	...	...																			Work not done.	25
26	Ambley street.	Albion street.				...	...	...	...																			Work not done.	26
27	Ambley street.	Albion street.				...	...	...	...																			Work not done.	27
28	Ambley street.	Albion street.				...	...	...	...																			Work not done.	28
29	Ambley street.	Albion street.				...	...	...	...																			Work not done.	29
30	Ambley street.	Albion street.				...	...	...	...																			Work not done.	30
31	Ambley street.	Albion street.				...	...	...	...																			Work not done.	31
32	Ambley street.	Albion street.				...	...	...	...																			Work not done.	32
33	Ambley street.	Albion street.				...	...	...	...																			Work not done.	33
34	Ambley street.	Albion street.				...	...	...	...																			Work not done.	34
35	Ambley street.	Albion street.				...	...	...	...																			Work not done.	35
36	Ambley street.	Albion street.				...	...	...	...																			Work not done.	36
37	Ambley street.	Albion street.				...	...	...	...																			Work not done.	37
38	Ambley street.	Albion street.				...	...	...	...																			Work not done.	38
39	Ambley street.	Albion street.				...	...	...	...																			Work not done.	39
40	Ambley street.	Albion street.				...	...	...	...																			Work not done.	40
41	Ambley street.	Albion street.				...	...	...	...																			Work not done.	41
42	Ambley street.	Albion street.				...	...	...	...																			Work not done.	42
43	Ambley street.	Albion street.				...	...	...	...																			Work not done.	43
44	Ambley street.	Albion street.				...	...	...	...																			Work not done.	44
45	Ambley street.	Albion street.				...	...	...	...																			Work not done.	45
46	Ambley street.	Albion street.				...	...	...	...																			Work not done.	46
47	Ambley street.	Albion street.				...	...	...	...																			Work not done.	47
48	Ambley street.	Albion street.				...	...	...	...																			Work not done.	48
49	Ambley street.	Albion street.				...	...	...	...																			Work not done.	49
50	Ambley street.	Albion street.				...	...	...	...																			Work not done.	50
51	Ambley street.	Albion street.				...	...	...	...																			Work not done.	51
52	Ambley street.	Albion street.				...	...	...	...																			Work not done.	52
53	Ambley street.	Albion street.				...	...	...	...																			Work not done.	53
54	Ambley street.	Albion street.				...	...	...	...																			Work not done.	54
55	Ambley street.	Albion street.				...	...	...	...																			Work not done.	55
56	Ambley street.	Albion street.				...	...	...	...																			Work not done.	56
57	Ambley street.	Albion street.				...	...	...	...																			Work not done.	57
58	Ambley street.	Albion street.				...	...	...	...																			Work not done.	58
59	Ambley street.	Albion street.				...	...	...	...																			Work not done.	59
60	Ambley street.	Albion street.				...	...	...	...																			Work not done.	60
61	Ambley street.	Albion street.				...	...	...	...																			Work not done.	61
62	Ambley street.	Albion street.				...	...	...	...																			Work not done.	62
63	Ambley street.	Albion street.				...	...	...	...																			Work not done.	63
64	Ambley street.	Albion street.				...	...	...	...																			Work not done.	64
65	Ambley street.	Albion street.				...	...	...	...																			Work not done.	65
66	Ambley street.	Albion street.				...	...	...	...																			Work not done.	66
67	Ambley street.	Albion street.				...	...	...	...																			Work not done.	67
68	Ambley street.	Albion street.				...	...	...	...																			Work not done.	68
69	Ambley street.	Albion street.				...	...	...	...																			Work not done.	69
70	Ambley street.	Albion street.				...	...	...	...																			Work not done.	70

* Credit, old bricks.

* Credit, old bricks and edgestones.

* Credit, blocks old granite.

* Credit, bricks, block sidewalk.

HIGHWAY DIVISION — PAVING SERVICE — DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "HIGHWAYS, MAKING OF,"

ii Credit.
iii Labor, Machine

PUBLIC WORKS DEPARTMENT.

HIGHWAY DIVISION — PAVING SERVICE — DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "PERMANENT STREET PAVEMENT."

[illegible]

PUBLIC WORKS DEPARTMENT

HIGHWAY DIVISION - PAVING SERVICE - DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "RECONSTRUCTING AND REPAIRING STREETS BY CONTRACT."

				MATERIALS.				EXPENSES.				WORK DONE.												
STREET.	From	To	Contractor.	Pavement.	Length, Linear Feet	Area, Square Yards	Total Cost.	Amount Paid to Contractor	RODSTONE.	GRANITE BLOCK.	SIDEWALK BRICK.	MISCELLANEOUS.	Engineering	Inspection	Traveling, etc.	Advertising	Miscellaneous	Excavation and Filling	Erection of Scaffolding	Brick, Stone, and Laid	Roadway and Driveway	Artificial Stone and Laid	Miscellaneous	Program.
									Cost	Quantity	Cost	Quantity	Cost	Quantity	Cost	Quantity								
1 Adams street	Dorchester avenue	Park street					\$0 60																	
2 Artificial stone and walks, rebates allowed						15,119 31																		
3 Asphalt repairs, 1929						128,326 01																		
4 Beacon street	Bridge over Boston & Albany Railroad	St. Mary's street	Central Construction Company			123 15		\$121,420 15																
5 Belvidere street	Dillon street	Massachusetts avenue	John McCourt Company	Sheet asphalt	770	2,427	9,624 02	9,351 36																
6 Beverly street	Washington Street North	Causeway street					56 00																	
7 Bondar street	Central square	Brookline	A. DeStefano & Son, Inc	Recut granite block			3,668 98																	
8 Boylston street	Ipworth street		B. E. Grant Company	Sheet asphalt	1,061	9,234	4,273 78	3,908 38	\$20 00															
9 Boylston street	Tremont street																							
10 C street	Sodley square	Washington street	B. E. Grant Company	Recut granite block	897	1,070	4,164 00	3,930 91																
11 Cambridge river	Summer street	West First street	B. E. Grant Company	Recut granite block	2,700	10,170	48,679 40	46,312 26	11 55															
12 Cambridge street	Seaver street	Cambridge avenue	John McCourt Company	Sheet asphalt			14,567 74	13,767 74																
13 Cambridge street	Washington street	Providence Division Railroad	A. DeStefano & Son, Inc	Bituthic			3,978 92	3,768 92																
14 Cambridge street	75 feet westerly	Meridian street	J. C. Coleman & Sons, Inc	Relay granite block	75	255	1,882 48	1,770 37																
15 Cambridge street	Washington street		S. J. Tomassello	Recut granite block			822 45	812 45																
16 Cambridge street	Washington street		A. DeStefano & Son, Inc	Recut granite block			788 64	768 57																
17 Cambridge street	Washington street						6 00																	
18 Cambridge street	Washington street		Arrow West First street	Recut granite block	1,985	3,719	29,363 20	27,719 49	2,348	\$6,321 60														
19 Cambridge street	Washington street		C. M. Callahan, Inc	Sheet asphalt	2,222	8,977	32,836 63	31,605 08	285 06															
20 Cambridge street	Washington street		Charles Capone	Concrete pavement	2,633	6,027	30,230 07	28,899 08	5,013 54	4,271														
21 Cambridge street	Washington street																							
22 Cambridge street	Washington street		S. J. Tomassello	Recut granite block			2,431 06	2,166 37																
23 Cambridge street	Washington street		S. J. Tomassello, Inc	Recut granite block	2,636	6,942	32,219 33	30,623 36	1,471 94	1,282														
24 Cambridge street	Washington street		S. J. Tomassello	Recut granite block			7,474 09	7,365 90																
25 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			3,224 46	2,951 96																
26 Cambridge street	Washington street		B. E. Grant Company	Bituthic			6,565 91	6,548 87																
27 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	535	1,887	3,224 46	2,951 96																
28 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	3,925	17,428	7,649 70	7,236 21																
29 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	2,938	18,708	42,325 23	42,159 88	30 25															
30 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	1,198	3,456	12,022 19	11,225 98	60 61															
31 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	2,099	10,309	36,753 60	34,337 28	1,002 13	844														
32 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	1,904	5,466	15,918 00	14,909 10																
33 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	881	1,362	7,791 00	7,308 27	80 66															
34 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	321	1,362	4,907 02	4,804 60																
35 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			246 36	213 13																
36 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	288	1,050	3,261 31	3,230 16																
37 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			81 91																	
38 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			36 00																	
39 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	531	1,961	5,592 95	7,634 31	654 90	526														
40 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	3,045	12,701	37,845 61	37,540 34	303 00	695														
41 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	2,049	14,670	53,301 90	51,119 80	119 80															
42 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	1,096	4,274	9,577 56	8,824 35	12 00	45														
43 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	382	1,145	3,967 00	3,848 00																
44 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			687 11	525 06																
45 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	565	2,142	8,150 34	6,753 05	488 80	388														
46 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			44 10																	
47 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	692	1,716	7,176 28	6,706 69	4 90															
48 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	100		4,981 06	4,499 20																
49 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			12,471 39	11,273 98	39 80															
50 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			76 80																	
51 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			466 00	422 97																
52 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			112 95																	
53 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			63 22																	
54 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			16 00																	
55 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	315	583	2,301 00	2,286 73																
56 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	2,507	11,300	24,372 96	23,727 53	25 09															
57 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	2,037	9,449	39,648 90	38,822 00																
58 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			2,125 00	2,125 00																
59 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			608 12																	
60 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt	1,080	6,871	24,669 14	23,699 14																
61 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt			113 52	108 72																
62 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
63 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
64 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
65 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
66 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
67 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
68 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
69 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
70 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
71 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
72 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
73 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
74 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
75 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
76 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
77 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
78 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
79 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
80 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
81 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
82 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
83 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
84 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
85 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
86 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
87 Cambridge street	Washington street		B. E. Grant Company	Sheet asphalt																				
88 Cambridge street	Washington street		B. E. Grant																					

PUBLIC WORKS DEPARTMENT.

HIGHWAY DIVISION — PAVING SERVICE — DETAIL OF WORK DONE BY CONTRACT AND CHARGED TO APPROPRIATION "SPECIAL APPROPRIATIONS."

	STREET.	From	To	Contractor.	Pavement.	Length, Linear Feet	Area, Square Yards	Total Cost.	Amount Paid to Contractor.	MATERIALS								EXPENSES.					WORK DONE						Progress.		
										RODSTONE.		GRANITE BLOCK.		SIDEWALK BRICK.		MISCELLANEOUS		Engineering.	Inspection.	Traveling, etc.	Advertising.	Miscellaneous.	Excavation and Filling.	Edging Set and Feet.	Brick Sidewalk Laid and Repaired.	Roadway Paved and Repaved.	Artificial Block Sidewalk Laid.	Miscellaneous.			
										Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.	Cost.	Quantity.														Cubic Yards.	Linear Feet.	Square Yards.	Square Yards.	Square Feet.
1...	Departmental equipment...							\$2,326 50																							1
2...	Kearland street improvements...							110 00																							2
3...	Lowell street, Nashua street and Causeway street			S. J. Tomasello	Sheet asphalt and granite block.			122,597 50	\$109,560 01	\$4,571 03	3,590	\$99 00		\$18 00		\$225 04		\$3,435 40	\$1,037 53	\$49 50	\$18 00	\$43,220 95									3
	Lowell street...	Brighton street...	Nashua street...		Sheet asphalt...	1,888	16,136																7,462	4,196	190	17,022	30,691		Completed December 5, 1929.		
	Nashua street...	Causeway street...	Leverett street...																												
	Causeway street...	Nashua street...	Lowell street...		Granite block...	233	1,008																			1,065			Completed June 23, 1929.		
	Causeway street...	Beverly street...	Nashua street...		Sheet asphalt...	534	8,629																								
4...	Morton street improvement...			J. J. McCarthy Company	Bituminous macadam	1,690	11,500	21,747 46	\$450 00 15,634 34	3,737 05	3,034						1,333 40	379 36	27 00	8 75	\$177 56	2,964	3,440		8,510			Unfinished...			4
5...	Oakland and Ashland street im- provement:							83,273 33		2,935 85	2,462						2,482 76	1,767 79	41 95		\$136 96 \$653 00										5
	Ashland street...	Washington street...	Hyde Park avenue...	M. DeMatteo	Sheet asphalt...	3,363	10,527		11,607 67														131	143			4,578		Completed October 16, 1929.		
	Ashland street...	Wilnot street...	Harvard street...	A. DeStefano & Son, Inc.	Bitulithic...	2,160	12,628		39,399 85														3,194	2,573		5,703	22,908		Completed December 4, 1929.		
	Oakland street...	Harvard street...	Richmond road...	A. DeStefano & Son, Inc.	Bitulithic...	2,950	21,650																				937		Completed December 4, 1929.		
	Ashland street...	Northerly side, 535 feet to 1,188 feet west of Harvard street and 68 feet west of Brown avenue.			Concrete retaining wall.	655			91,307 50														270						Completed December 4, 1929.		
	Ashland street...	Northerly side, for 305 feet westerly.		M. DeMatteo		365			15,918 00														1,205						Completed September 14, 1929.		
6...	River street reconstruction...							143 33										68 00		0 60		\$74 75									6
7...	Street signs...							11,469 92										5,846 67	1,224 07	156 53	31 60		\$3,701 63								7

* Horse transport tractor.
* Cement.
* Labor, teaming, etc.

* Gravel, cement, cinders.
* Photographs.
* Paid to J. C. Coleman & Sons Company.

* Labor, painting, erecting and excavation.
* Signs, posts, etc.
* Paid to P. J. Dunn & Co., for fence.

DETAIL OF WORK DONE BY HIGHWAY DIVISION — PAVING SERVICE

				WORK DONE.													COST OF LABOR.													
No.	STREET.	FROM	TO	Total Cost.	MACADAM REPAVING.		DEPTH.	ROADWAY PAVED AND REPAVED.	SIDEWALK SET AND REPAVED.	GUTTER PAVED AND REPAVED.	BRICK SIDEWALK Laid AND REPAVED.	CURBED STONE SIDEWALK.	CONCRETE Laid AND REPAVED.	MISCELLANEOUS.	MISCELLANEOUS.	Compressor.	Tractor.	Edgewise excavation.	Edgewise setting and resetting.	Macadam Excavation.	Macadam Spreading.	Gutter Excavation.	Gutter Paving and Repaving.	Paved Roadway Excavation.	Block Paving and Repaving.	Crownwalk Excavation.	Crownwalk Laying and Relaying.	Brick Sidewalk Excavation.		
					Square Yards.	Inches.																							Square Yards.	Linear Feet.
1.	Alexander street	Dudley street.	527 feet north of Bird street.	\$3,690 38	4,037 1/2	5																								
2.	Angell street.	Park street.	Everdeen street.	642 80	2,666	4																								
3.	Ashland street.	Amory street.	Washington street.	3,368 06	2,683 1/2	5																								
4.	Atherton street.	213 feet west of Beacon street.	Raleigh street.	1,918 14	1,158	11																								
5.	Bay State road	Dorchester avenue	Dorchester Rapid Transit	1,457 52	1,300	4																								
6.	Beale street.	Washington street.	Causeway street.	7,854 78	4,510 11	4,888 1/2	5	3,307 7	733			693																	\$65 00	
7.	Beverly street.	Warren street.	Walnut avenue	4,510 11	1,506	4																								
8.	Bower street.	Blue Hill avenue	Harvard street.	1,700 80	1,590 80																									
9.	Brookview street	North Beacon street	Harvard avenue.	1,590 80	975 00																									
10.	Cambridge street																													
11.	Cambridge street (city proper)																													
12.	Centre street.	(Grove street.)	500 feet beyond Linden street.	6,862 37	10,510	6												\$25 00												
13.	Chestnut avenue.	Gleadow road.	Case street.	5,175 09	4,250	5																								
14.	Congress street.	Boylston street.	Green street.	960 25	4,250	5																								
15.	Cornell street.	Stollings street.	Fittable street.	9,737 31	7,633	6	46	167 5																						
16.	East Eighth street.	Washington street.	Poplar street.	17,981 08	8,184 1/2	8																								
17.	East Seventh street.	K street.	N street.	17,981 08	8,184 1/2	8																								
18.	Elmira street.	O street.	Columbia road.	3,560 33	1,795 1/2	4																								
19.	Elmore street.	Market street.	Murdoch street.	4,196 12	3,435	4																								
20.	Faneuil street.	Washington street.	Walnut avenue.	3,389 89	2,134 1/2	5																								
21.	Forbes street.	Washington street.	Harnett street.	6,910 82	10,068	5																								
22.	Forest Hills street.	Chesnut avenue.	Centre street.	5,504 14	2,980	5																								
23.	Gladsstone street.	Willoughby street.	The Arborway	5,290 71	2,517	5																								
24.	Gordon avenue.	Heard street.	120 feet easterly	2,569 71	2,315	5																								
25.	Grove street.	Bremen street.	Meridian street.	1,395 38	1,733 1/2	6																								
26.	Greenwood avenue.	120 feet east of Hyde Park avenue.	Meridian street.	1,508 42	2,300	8																								
27.	Hamilton street.	Centre street.	Metropolitan avenue.	1,889 67	2,311 1/2	8																								
28.	Harria avenue.	East Milton street.	Readville Trotting Park.	3,228 13	3,635 1/2	4																								
29.	Highland street.	John Eliot square.	Alveston street.	3,222 38	1,166	5																								
30.	Holbrook street.	Centre street.	Marcella street.	7,522 98	6,778	5																								
31.	Hyde Park avenue.	Dane street.	Dane street.	2,685 41	2,491	5																								
32.	Hyde Park avenue.	Commonwealth Highway	St. 382 Hyde Park avenue	7,207 89	8,000	4																								
33.	Hyde Park avenue.	Elbridge road.	Walk Hill street.	7,865 60	6,600	3																								
34.	Ivy street.	Commonwealth Highway	Metropolitan avenue	1,600 38	1,400	4																								
35.	Jeffries street.	St. Mary's street	Maverick street.	1,457 50	1,900	4																								
36.	K street.	East Third street.	884 feet north of East First street.	2,714 02	4,214 1/2	4																								
37.	Keweenaw street.	Beacon street.	Medford street.	1,182 94	6,500	3																								
38.	Lake street.	Commonwealth avenue	250 feet north of Kendrick street	3,308 19	6,500	3																								
39.	Logan street.	Lambert avenue	Thornton street.	1,439 73	770	5																								
40.	Miller street.	Rutherford avenue	Lawrence street.	1,449 30	2,000	4																								
41.	Murden street.	Richford street.	Day street.	4,768 26	3,555 1/2	4																								
42.	North Harvard street	Western avenue.	150 feet south of Franklin street.	2,138 63	2,000	4																								
43.	Polon street.	East Cottage Parkway	Dart street.	2,618 42	2,506	4																								
44.	Pleasant street.	Joy street.	Beyond Brimmer street.	4,658 39	2,156	4																								
45.	Revere street.	Yves avenue	Beacon street.	2,553 97	2,060	4																								
46.	Roxford street.	Grove street.	Charles street.	3,153 68	1,306	4																								
47.	Richfield street.	Blue Hill avenue	Commonwealth Highway	2,667 04	2,256	4																								
48.	River street.	Columbia road	Olney street.	6,523 15	5,369 1/2	4																								
49.	Robey street.	Washington street.	Standard street.	480 19																										
50.	Robinson street.	East Cottage street	Marshall street.	1,657 68	1,500	4																								
51.	Holland street.	Carter street.	Horton & Maine Railroad	4,645 03																										
52.	Hollins street.	Washington street.	Marion avenue	1,848 83	560	4																								
53.	Hove street.	Commonwealth Highway	No. 27 Rowe street.	1,869 29																										
54.	Saratoga street.	Waupee road.	Winthrop Bridge	5,657 77	6,800	4																								
55.	Savin street.	Warren street.	Blue Hill avenue	3,721 84	3,691	4																								
56.	Savin Hill avenue.	Commonwealth avenue	Railroad bridge.	8,813 84	3,691	4																								
57.	Summit avenue.	Commonwealth avenue	Brookline line	4,460 82	3,322	4																								
58.	Summit street.	Milton avenue	Milton town line	2,928 26	2,222 1/2	6																								
59.	Tremont street.	Boylston street.	Park street.	5,167 72																										
60.	Valley street.	Marcella street.	Thornton street.	3,408 88	1,333 1/2	6																								
61.	Walk Hill street.	Harvard street.	Wellington Hill footway	1,038 57																										
62.	Walnut street.	Washington street.	Washington street.	2,725 96	1,000	5																								
63.	West Selden street.	Beacon street.	Beacon street.	1,391 44	1,125	4																								
64.	Winter street (Dorchester)	Lena terrace.	Lena terrace.	3,323 36	2,600	4																								
65.	Wordsworth street.	Poppe street.	Poppe street.	3,475 14	7,650	3																								
66.	Wrentham street.	Adams street.	375 feet beyond Bruce street.	6,000 91	3,150	4																								

Concrete base removed (square yards).

Concrete base laid (square yards).

Blanket coated with asphalt (square yards).

ICE FORCE—CHARGED TO APPROPRIATION FOR MAINTENANCE.

¹⁴ Cost of concrete base.
¹⁷ Excavating roadway (square yards).
¹⁸ Cost of drilling and blasting rock.

STREET OPENINGS.

Under classes 1 and 2 of the schedule of permit fees, permits were issued for openings in public ways, as follows:

To WHOM ISSUED.	Number of Permits.	Length in Feet.
Sewer and Water Service.....	2,880	34,560
Boston Consolidated Gas Company.....	1,616	40,400
Boston Elevated Railway.....	165	24,750
Dedham and Hyde Park Gas and Electric Company.....	75	1,875
Edison Electric Illuminating Company.....	3,756	262,920
Miscellaneous.....	2,796	139,800
New England Telephone and Telegraph Company.....	712	73,400
Emergency permits used and returned.....	892	22,300
	12,892	600,005

Making a total length of openings approximately 113 miles.

Total of all permits issued 19,623.

Permits for other than street openings have been issued as follows:

Cleaning snow from roof	21
Erecting and repairing awnings	377
Erecting and repairing buildings	1,013
Painting and minor repairs on buildings	3,543
Moving building in streets	9
Feeding horses in streets	13
Placing signs flat on buildings	1,059
Raising and lowering safes, etc.	50
Emergency for above	292
Special permits	354
	<u>6,731</u>

The fees from issuing permits amounted to \$25,434.91.

Of this amount \$19,698.51 was deposited with the City Collector and \$5,736.40 was billed to Public Service Corporations.

BONDS.

There are now on file 2,942 surety bonds, in amount of one, three and twenty thousand dollars, covering the city against claims for damages, etc., through the use of permits.

APPENDIX D.

REPORT OF THE DIVISION ENGINEER OF
THE SANITARY DIVISION.

BOSTON, January 1, 1930.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,— I submit herewith a statement of the activities and expenditures of the Sanitary Division for the year ending December 31, 1929.

The maintenance expenditures of the Sanitary Division follow:

Sanitary Division	\$3,221,814 62
-----------------------------	----------------

SANITARY SERVICE.

The reduction in the number of complaints brought about by the establishment of a follow-up system in the various districts has justified the adoption of this system and the close attention paid to this branch of the service.

The scarcity of the inland dumps offers a very serious problem, cutting down the number of loads on account of the longer haul. Nevertheless, these obstacles have to be met, as the removal of ashes and garbage must go on and the collections kept up on regular schedule, irrespective of weather conditions or problems of long haul.

STREET CLEANING SERVICE.

While the street cleaning forces in the down town portion of the city have been able to keep these streets

clean, a very different problem presents itself in the suburban districts. While the motor-driven pick-up sweeper does very effective work on a certain class of smooth-surface streets, there are other streets that require a much larger force than we have at the present time to keep them clean.

Yours respectfully,

D. J. LYNCH,
Assistant Engineer, Sanitary Division.

SANITARY SERVICE.

FINANCIAL STATEMENT.

Appropriation	\$3,199,828 79
Transferred from other appropriations	21,985 83
	<u>\$3,221,814 62</u>
Expended by Sanitary Service, \$2,177,678 60	
Expended by Street Cleaning and	
Oiling Service	1,044,136 02
	<u>\$3,221,814 62</u>

INCOME.

Statement showing the amount of bills and cash deposited with the City Collector from January 1, 1929, to December 31, 1929, and credited to General Revenue.

Tickets and bills for the removal of ashes and waste	\$68,636 70
Sale of manure	3,489 55
Sale of old material	84 60
Oiling streets	175 71
Miscellaneous	38 41
Total	<u>\$72,424 97</u>

AMOUNT PAID INTO THE CITY TREASURY DURING THE YEAR.

Removal of ashes and waste	\$68,636 70
Sale of manure	4,097 66
Sale of old material	84 60
Oiling streets	175 71
Miscellaneous	38 41
Total	<u>\$73,033 08</u>

Total Cost of House Dirt, Waste, Rubbish and Offal, 1929.

Salaries, assistant engineer, supervisor, chief veterinary and medical inspector	\$9,409 04
Office supplies and expenses	3,357 94
Ashes, waste and rubbish account	1,386,827 08
Carried forward	<u>\$1,399,594 06</u>

<i>Brought forward</i>	.	.	.	.	.	.	\$1,399,594 06
House offal account	.	.	.	.	.	.	661,020 87
Retired veterans' pensions	.	.	.	.	.	\$704 25	
Retired laborers' pensions	.	.	.	.	.	3,475 09	
							<hr/> 4,179 34
Total	.	.	.	.	.	.	<hr/>\$2,064,794 27

CONSTRUCTION REPAIRS AND HORSESHOEING
ACCOUNT.

Expended for labor	.	.	.	.	.	\$81,113 01	
Expended for stock	.	.	.	.	.	31,771 32	
							<hr/> 112,884 33
Total	.	.	.	.	.	.	<hr/><u>\$2,177,678 60</u>

Items of Expenditure for the Year 1929.

Salary, supervisor	\$4,000 00
Salary, senior engineer	2,859 04
Salary, medical inspector	1,300 00
Salary, chief veterinary (in part)	1,250 00
Salaries, foremen	26,280 04
Salaries, yard clerks	2,825 07
Labor, collecting and disposing of house dirt and ashes	725,053 33
Labor, collecting and disposing of waste and rubbish	30,860 58
Labor, collecting and disposing of house offal	360,031 04
Labor and stock at stables and yards	87,563 87
Hired teams on ashes	8,688 23
Contractor on ashes, East Boston, Brighton, West Roxbury, Dorchester and Hyde Park	198,837 83
Contractor on offal, East Boston, Brighton, West Roxbury, Dorchester and Hyde Park	198,837 82
Holidays, pay allowed	156,959 63
Vacations, pay allowed	24,754 98
Grain	9,880 32
Hay and straw	15,247 50
Medical attendance and pay allowed injured employees	9,386 31
Veterinary services and medicine	205 08
Outside wheelwright, blacksmith, horseshoeing, etc	10,237 81
Labor and stock, wheelwright, blacksmith, painting, etc	97,449 84
Repairs to stable and sheds	28,946 23
Fuel	3,273 85
Gas	721 54
Electric light and power	3,212 43
Printing, stationery, office supplies, advertising	3,318 01
Automobile expenses	158,707 27
Rents	1,980 00
Telephone tolls and rentals	831 61
Retired veterans' pensions	704 25
Retired laborers' pensions	3,475 09
Total	\$2,177,678 60

Amount Expended for the Collection and Disposal of Ashes, Garbage, Waste and Rubbish, by Districts, 1929.

Districts.	Popula- tion.	ASHES.		GARBAGE.		WASTE AND RUBBISH.		Total Cost.	Total Cost Per Capita.
		Cost.	Per Capita.	Cost.	Per Capita.	Cost.	Per Capita.		
1. South Boston.....	75,303	\$93,246 73	\$1.2250	\$41,245 84	\$0.5477	.....	.....	\$134,547 57	\$1.7867
2. East Boston.....	68,118	43,191 71	0.6340	16,085 20	0.2361	.....	.....	59,276 91	0.8702
3. Charlestown.....	37,026	55,183 57	1.4904	13,796 78	0.3726	.....	.....	68,980 35	1.8630
4. Brighton.....	45,485	53,555 68	1.1774	30,594 54	0.6716	.....	.....	84,105 22	1.8490
5. West Roxbury.....	62,955	61,927 29	0.9836	37,577 77	0.5968	.....	.....	99,505 06	1.5805
6. Dorchester.....	167,292	156,140 45	0.9333	96,544 35	0.5472	.....	.....	252,684 80	1.5104
7. Roxbury.....	133,056	234,574 03	1.7629	113,346 62	0.8518	\$14,821 03	\$0.1113	362,741 68	2.7262
8 and 9. South End and Back Bay.....	121,673	276,638 58	2.2736	90,805 70	0.7463	37,922 49	0.3116	405,366 77	3.3716
10. North and West Ends.....	77,223	146,357 87	1.8965	33,981 37	0.4406	14,008 48	0.1815	194,347 72	2.5167
11. Hyde Park.....	20,044	14,029 89	0.6999	5,878 96	0.2933	.....	.....	19,908 85	0.9932
12. Disposal station.....	.....	179,898 40	.....	181,208 74	.....	5,275 88	.....	366,383 02	.....
Totals.....	808,175	\$1,314,744 20	.....	\$661,020 87	.....	\$72,082 88	.....	\$2,047,847 95	.....

House Dirt and Ashes Removed.

YEARS.	Loads.	Cubic Yards.	Tons.
1925*.....	239,840	984,287	401,087
1926.....	232,670	1,035,160	421,828
1927.....	182,658	1,140,579	464,787
1928.....	175,266	1,080,421	440,271
1929.....	170,448	1,113,499	453,751

House Offal Removed.

YEARS.	Loads.	Cubic Yards.	Tons.
1925*.....	46,093	137,597	81,176
1926.....	48,738	161,551	95,315
1927.....	46,002	183,110	108,034
1928.....	39,620	185,095	109,207
1929.....	37,105	182,731	107,811

Waste and Rubbish Removed.

YEARS.	LOADS.		Cubic Yards.	Tons.
	Paper Carts.	Market Wagon.		
1925*.....	1,772	4,192	47,712	5,851
1926.....	1,783	4,438	49,768	6,131
1927.....	1,722	4,068	46,320	5,681
1928.....	1,696	3,621	42,436	5,284
1929.....	1,271	†3,589	41,232	5,484

Loads of Material Collected.

YEARS.	Ashes.	Offal.	Rubbish.	Total Loads.	Tons.
1925*.....	239,840	46,093	5,964	291,897	488,114
1926.....	232,670	48,738	6,221	287,629	523,274
1927.....	182,658	46,002	5,790	234,450	578,502
1928.....	175,266	39,620	5,284	220,203	554,762
1929.....	170,448	37,105	5,154	212,707	567,046

* 11 months.

† Does not include 294 auto truck loads.

Summary.

MATERIAL.	Cubic Yards.	Tons.
Ashes.....	430,460	175,413
Offal.....	74,224	43,792

Final Disposition of All Material in Loads and Tons (2,000 Pounds). Collected by the Sanitary Service, January 1, 1929, to December 31, 1929.

CLASS OF REFUSE.	COLEMAN DISPOSAL COMPANY.		COLLECTED AND DISPOSED OF BY CONTRACTORS.		Total Loads.	Total Tons.
	Loads.	Tons.	Loads.	Tons.		
House dirt and ashes.....	110,737	278,338	59,711	175,413	170,448	453,751
Offal.....	31,495	82,510	5,602	25,301	37,105	107,811
Waste and rubbish.....	5,154	5,484	.....	.....	5,154	5,484
Totals.....	147,394	366,332	65,313	200,714	212,707	567,046

Cost of Collection and Disposal of Refuse by Day Labor Force in the City of Boston for the Year Ending December 31, 1929.

Districts and Population.	CHARACTER OF REFUSE.	COST PER TON BY DISTRICTS.					COST OF DISTRICTS.						WHERE DISPOSED OF.
		Tons (2,000 lbs.)	Total Tons.	To Collect.	For Disposal.	Total Collection and Disposal.	To Collect.	Total Cost to Collect.	For Disposal.	Total Cost of Disposal.	Total Cost of Collection and Disposal.	Total Cost per Capita Collection and Disposal.	
1 (75,303)	Mixed refuse, principally ashes (no kitchen wastes) ..	38,318		\$2 6944	\$0 0391	\$2 7336	\$103,246 73		\$1,500 00				Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	4,791		10 6962		10 6962	51,245 84						Coleman Disposal Company.
	Store refuse, principally paper.	14		3 9285		3 9285	55 00						Coleman Disposal Company.
			43,123	Av. \$3 5838	Av. \$0 0391	Av. \$3 6186		\$134,547 57		\$1,500 00	\$136,047 57	\$2 0722	
3 (37,026)	Mixed refuse, principally ashes (no kitchen wastes) ..	21,055		\$3 0963		\$3 0963	\$65,183 57						Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	4,300		5 5328		5 5328	23,796 78						Coleman Disposal Company.
			25,355	Av. \$3 5093		Av. \$3 5093		\$8,980 35			\$8,980 35	2 4034	
5 (part) and 7 (160,978)	Mixed refuse, principally ashes (no kitchen wastes) ..	97,825		\$2 8715		\$2 8715	\$280,910 67						Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	36,564		4 1276		4 1276	150,924 39						Coleman Disposal Company.
	Store refuse, principally paper.....	1,258		11 7814		11 7814	14,821 03						Coleman Disposal Company.
			135,647	Av. \$3 2927		Av. \$3 2927		\$446,656 09			\$446,656 09	2 7746	
8 and 9 (121,673)	Mixed refuse, principally ashes (no kitchen wastes) ..	72,987		\$3 7902	\$0 0548	\$3 8450	\$276,638 58		\$4,000 00				Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	13,682		7 8584	0 1827	8 0411	107,519 37		2,500 00				Coleman Disposal Company.
	Store refuse, principally paper.....	2,790		13 5922		13 5922	37,922 49						Coleman Disposal Company.
			89,459	Av. \$4 7516	Av. \$0 0750	Av. \$4 7908		\$422,080 44		6,500 00	\$428,580 44	3 5224	
10 (77,223)	Mixed refuse, principally ashes (no kitchen wastes) ..	48,153		\$3 2471	\$0 0683	\$3 3094	\$156,357 87		\$3,000 00				Coleman Disposal Company.
	Garbage, principally kitchen wastes.....	4,682		9 3937	0 7475	10 1412	43,981 37		3,500 00				Coleman Disposal Company.
	Store refuse, principally paper.....	1,432		9 8512		9 8512	14,008 48						Coleman Disposal Company.
			54,257	Av. \$3 9506	Av. \$0 1198	Av. \$4 0704		\$214,347 72		6,500 00	\$220,847 72	2 8598	
*	Coleman Disposal Company.....									345,000 00	345,000 00		
472,203	Totals.....		347,841	Av. \$3 8135	Av. \$1 0335	Av. \$4 8479		\$1,326,612 17		\$399,500 00	\$1,686,112 17	\$3 5707	

* The amount paid to Coleman Disposal Company is for disposal of all refuse collected by the city force and Dorchester contracts.
District 6 on page 115. Total as above..... \$1,686,112 17
Add total of contract table, page 115..... 491,666 43

Net amount of appropriation..... \$2,177,678 60

Coleman Disposal Company's contract calls for \$345,000 per year.

0007 1 11 10 20 11 10 20 11 10 20

Cost of Collections and Disposal of Refuse by Contract in the City of Boston for the Year 1929.

Contract Districts and Population.	CHARACTER OF REFUSE.	Tons (2,000 lbs.)	Total Tons.	Cost per Ton by Districts, Collection and Disposal.	COST PER DISTRICTS.			Where Disposed of.
					Cost.	Total Cost.	Total Cost per Capita.	
2.. (68,118).....	(Mixed refuse, principally ashes (no kitchen wastes).....	34,758	.....	\$1.2426	\$43,191 71	.....	.....	Inland dumps.
	(Garbage, principally kitchen wastes....	2,990	.....	5.3796	16,083 20	.....	.....	*
			37,748	Av. \$1.5703	.....	\$59,276 91	\$0.8702	
4.. (45,485).....	(Mixed refuse, principally ashes (no kitchen wastes).....	25,958	.....	\$2.0631	\$53,555 68	.....	.....	Inland dumps.
	(Garbage, principally kitchen wastes....	12,701	.....	2.4052	30,549 54	.....	.....	*
			38,659	Av. \$0.1755	.....	84,105 22	1.8490	
5.. (35,033).....	(Mixed refuse, principally ashes (no kitchen wastes).....	19,898	.....	\$1.5383	\$30,590 65	.....	.....	Inland dumps.
	(Garbage, principally kitchen wastes....	7,900	.....	2.5316	20,000 00	.....	.....	*
			27,798	Av. \$1.8195	.....	50,590 65	1.4440	
6.. (167,292).....	(Mixed refuse, principally ashes (no kitchen wastes).....	86,119	.....	\$1.8132	\$156,140 45	.....	.....	Coleman Disposal Co.†
	(Garbage, principally kitchen wastes....	18,491	.....	6.5731	121,544 35	.....	.....
			104,610	Av. \$2.6544	.....	277,684 80	1.6598	
11.. Hyde Park... (20,044)	(Mixed refuse, principally ashes (no kitchen wastes).....	8,680	.....	\$1.6163	\$14,029 89	.....	.....	Inland dumps.
	(Garbage, principally kitchen wastes....	1,710	.....	3.4379	5,878 96	.....	.....	*
			10,390	Av. \$1.9161	.....	19,908 85	0.9932	
335,972	Totals.....	.....	219,205	.....	.....	\$491,566 43	\$1.4631	

* Removed beyond city limits and presumably fed to swine.

† Contract for disposal.

Total as above..... \$491,566 43
Add total of day labor table (between pages 116 and 117)..... 1,686,112 17
Net amount of appropriation..... \$2,177,678 60

SANITARY DIVISION — STREET CLEANING SERVICE.

General administration:

Salary, deputy supervisor (in part)	\$3,325 00	
Pensions, retired veterans	2,130 26	
Pensions, retired laborers	4,070 00	
Annuity, Acts of 1920 — chapter 132	600 00	
Salary, medical inspector	900 00	
Salary, chief veterinarian	1,000 00	
Injured employees	4,533 72	
Telephone	655 68	
Printing and stationery	1,179 97	
Advertising	8 75	
Miscellaneous	494 27	
Auto repairs and maintenance,	6,894 67	
	<hr/>	\$26,139 00

General expenses other than general administration:

Wages, stablemen	\$49,016 06	
Wages, yardmen	3,138 39	
Wages, yard laborers	7,766 50	
Wages, watchmen	10,415 00	
Wages, clerks	6,923 22	
Wages, telephone operator	1,616 10	
Hay, grain and straw	32,383 72	
Light	905 00	
Fuel	531 75	
Horseshoeing	6,828 84	
Harnesses, etc.	4,324 59	
Veterinary service and medicine,	328 21	
Stable and yards, supplies	1,637 62	
Stable and yards, building repairs	2,363 24	
Horses, new	2,800 00	
Auto repairs and maintenance,	11,805 74	
	<hr/>	142,783 98

Operating expenses:

Salaries, district foremen	\$24,951 70	
Salaries, inspectors	54,072 88	
Wages, laborers	515,790 93	
Holiday and allowed time	37,328 97	
Vacation	18,888 95	
Teams and autos, hire of	41,305 25	
Dumps, use of	1,510 01	
	<hr/>	
<i>Carried forward</i>	\$693,848 69	\$168,922 98

<i>Brought forward</i>	\$693,848 69	\$168,922 98
Snow license	500 00	
Cart repairs	22,148 66	
Wagon repairs	880 28	
Tools and repairs	221 98	
Vehicle supplies	146 36	
Push carts and barrels	1,829 94	
Push brooms, teamster brooms, etc.	2,338 00	
Machine brooms	1,872 00	
Sweeping machine repairs	1,224 35	
Sand	702 01	
Sand spreaders	1,288 00	
Sand barrels, etc.	569 29	
Rubbish boxes	7,322 42	
Shovels, hoes and picks, etc.	2,428 72	
Snow plows, etc.	9,684 13	
Snow scupper repairs	72 71	
Removal of snow shed	50 00	
Water cart repairs	957 19	
Hose, etc.	452 74	
Horse-drawn flusher repairs	141 06	
Miscellaneous	323 65	
Auto, repairs and maintenance,	79,844 20	
		<hr/>
		828,846 38
Total		<hr/> <hr/>
		\$997,769 36

STREET WATERING AND OILING BRANCH.

General administration:

Salaries, deputy supervisor (in part)	\$175 00	
Printing and stationery	62 10	
Telephone	43 60	
Auto repairs and maintenance,	897 46	
		<hr/>
		\$1,178 16

General expenses other than general administration:

Wages of stablemen	\$273 75	
Hay and grain	182 50	
Horseshoeing	108 00	
Shop, stock for repairs	61 90	
Miscellaneous	153 17	
Auto repairs and maintenance,	1,209 48	
		<hr/>
		1,988 80

<i>Carried forward</i>		<hr/>	\$3,166 96
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DISTRIBUTION OF EXPENDITURES.

Removing snow	\$222,482 08
Flushing streets	72,472 51
Street patrolling	63,320 61
Push cart patrolling	166,476 65
Refuse box collections	32,667 30
Cleaning of paved streets	249,479 18
Cleaning of macadam streets	109,012 51
Cleaning of streets by motor machines	72,519 47
Public alleys	3,056 03
Sanding of slippery streets	6,283 02

Total	\$997,769 36
Oiling of public streets and ways	44,103 30
Watering of public streets and ways	2,263 36
Total	<u>\$1,044,136 02</u>

Summary.

ITEMS.	STREET CLEANING BRANCH.			STREET WATERING AND OILING BRANCH.		
	1927.	1928.	1929.	1927.	1928.	1929.
Labor.....	\$832,665 00	\$758,572 75	\$771,624 97	\$18,734 53	\$18,642 19	\$20,256 37
Teaming.....	68,072 00	31,971 41	41,305 25			
Supplies and repairs....	162,508 71	182,525 03	184,839 14	30,640 53	23,058 30	26,110 29
Totals.....	\$1,063,245 71	\$973,069 19	\$997,769 36	\$49,375 06	\$41,700 49	\$46,366 66

Macadam Streets Oiled — Cost of Labor, Teaming, Oil, etc., Including Supervision.

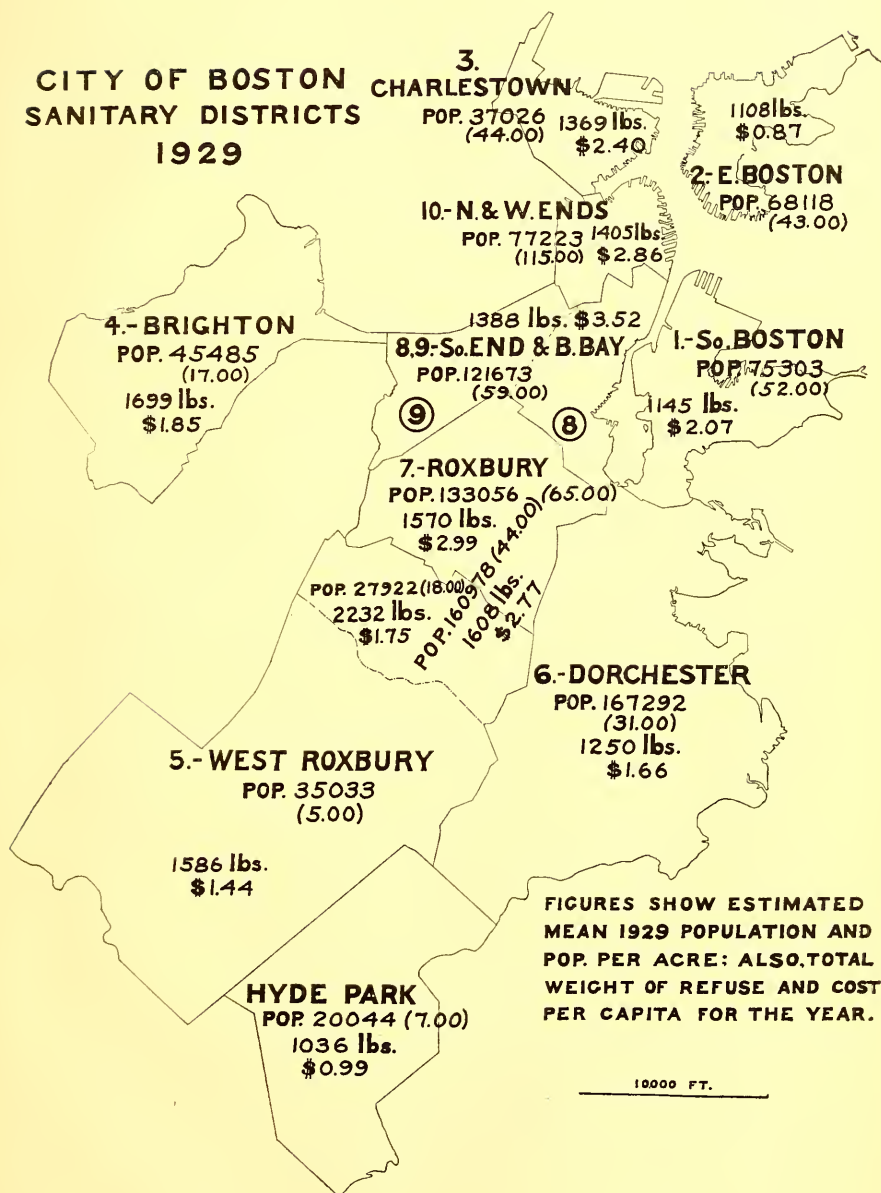
DISTRICTS.	Area Oiled Once, Square Yards.	Equivalent Mileage, 30-Foot Roadway.	DATES OF OILING.		Total Cost.	Cost per Square Yard Covered Once.	Gallons Used.	Gallons per Square Yard.
			First.	Last.				
South Boston.....	162,972	9.26	May 31	Oct. 5	\$4,406 75	\$0.027	30,369	.1786
Charlestown.....	67,599	3.84	June 4	June 10	1,912 23	0.028	13,600	.2011
Brighton.....	175,493	9.97	May 16	Nov. 20	5,118 05	0.029	35,938	.2047
West Roxbury.....	455,329	25.87	May 1	Nov. 8	10,818 18	0.024	78,762	.1729
Dorchester.....	369,065	20.97	Apr. 29	Oct. 15	9,267 00	0.025	64,153	.1738
Roxbury.....	250,351	14.22	Apr. 5	Oct. 25	6,934 09	0.028	45,346	.1811
South End.....	44,990	2.55	Apr. 27	Oct. 23	2,516 07	0.055	10,692	.2376
Hyde Park.....	88,421	5.02	May 2	Oct. 28	3,130 93	0.35	17,828	.2016
Total.....	1,614,220	91.70	.....	.....	\$44,103 30	.....	296,688	.1838
Average.....	.....	.....	.....	.....	.....	\$0.027	.....	.....

Cleaning of Paved Streets and Macadam Gutters, 1929.

DISTRICT.	PAVED STREETS.		MACADAM GUTTERS.		TOTAL PAVED STREETS AND MACADAM GUTTERS.	PAVED STREETS AND MACADAM GUTTERS.				LOADS OF DIRT REMOVED.						CUBIC YARDS OF DIRT REMOVED.								
	PAVED STREETS.		MACADAM GUTTERS.		Cleaned Once.	Inspection, Labor.	All Other Charges.	Total Cost.	Cost per Thousand Square Yards Cleaned Once.	PAVED STREETS.		MACADAM GUTTERS.		PAVED STREETS AND MACADAM GUTTERS.		PAVED STREETS.			MACADAM GUTTERS.			PAVED STREETS AND MACADAM GUTTERS.		
	Square Yards Cleaned Once.	Equivalent Mileage 30-foot Roadway Cleaned Once.	Square Yards Cleaned Once.	Linear Miles Cleaned Once.						Loads.	Cost per Load.	Loads.	Cost per Load.	Loads.	Cost per Load.	Total Cubic Yards.	Per Thousand Square Yards.	Cost per Cubic Yard Removed.	Total Cubic Yards.	Per Thousand Square Yards.	Cost per Cubic Yard Removed.	Total Cubic Yards.	Per Thousand Square Yards.	Cost per Cubic Yard Removed.
South Boston.....	11,815,494	671.33	1,725,762	326.84	13,541,256	\$28,472 87	\$10,196 79	\$38,669 66	\$2.856	3,764	\$6.94	1,156	\$10.853	4,920	\$7.859	7,528	.6371	\$3.47	2,312	1.339	\$5.426	9,840	.7266	\$3.929
East Boston.....	8,995,710	511.12	4,217,948	798.85	13,213,658	32,280 34	8,154 78	40,435 12	3.06	2,069	4.674	3,635	8.478	5,704	7.088	4,138	.4599	2.337	7,270	1.723	4.239	11,408	.8633	3.544
Charlestown.....	7,158,211	406.71	2,097,271	397.21	9,255,482	13,952 03	2,840 07	16,792 10	1.814	1,083	8.042	678	11.92	1,761	9.535	2,166	.3025	4.021	1,356	.6462	5.96	3,522	.3805	4.767
Dorchester.....	8,995,470	511.11	4,881,411	924.5	13,876,881	34,499 02	7,458 30	41,957 32	3.023	2,595	5.02	4,829	5.99	7,424	5.611	5,190	.5769	2.51	9,658	1.9785	2.995	14,848	1.0699	2.805
Roxbury.....	6,127,284	342.45	1,198,264	226.94	7,325,548	13,882 48	4,383 67	18,266 15	2.493	2,720	5.52	957	4.029	3,677	4.967	5,440	.8878	2.76	1,914	1.5973	2.014	7,354	1.0038	2.433
Uptown and Back Bay.....	32,871,944	1,867.72	4,765,217	902.5	37,637,161	42,259 90	11,211 12	53,471 02	1.42	2,791	10.209	2,262	10.954	5,053	10.581	5,582	.1698	5.104	4,524	.9493	5.477	10,106	.2685	5.29
Downtown.....	71,275,892	4,049.76	.....	.....	71,275,892	38,327 39	11,801 26	50,128 65	.7033	6,307	7.948	.....	.....	6,307	7.948	12,814	.1769	3.974	.....	.....	.....	12,614	.1769	3.974
North and West Ends.....	86,435,219	4,911.09	.....	.....	86,435,219	76,937 20	21,834 47	98,771 67	1.142	11,084	8.911	.....	.....	11,084	8.911	22,168	.2564	4.455	.....	.....	.....	22,168	.2564	4.455
Totals.....	233,675,224	13,271.29	18,885,573	3,576.84	252,561,097	\$280,611 23	\$77,880 46	\$358,491 69	.....	32,413	.....	13,517	.....	45,930	.....	64,826	.....	.....	27,034	.....	.....	91,860	.....	.....
Averages.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	\$7.696	.....	\$8.064	.....	\$7.805	.....	2774	\$3.848	.....	1.431	\$4.032	.....	.3637	\$3.902

1900-1901		1901-1902		Total
Area (Acres)	Yield (Bushels)	Area (Acres)	Yield (Bushels)	
100	1000	100	1000	2000
200	2000	200	2000	4000
300	3000	300	3000	6000
400	4000	400	4000	8000
500	5000	500	5000	10000
600	6000	600	6000	12000
700	7000	700	7000	14000
800	8000	800	8000	16000
900	9000	900	9000	18000
1000	10000	1000	10000	20000
1100	11000	1100	11000	22000
1200	12000	1200	12000	24000
1300	13000	1300	13000	26000
1400	14000	1400	14000	28000
1500	15000	1500	15000	30000
1600	16000	1600	16000	32000
1700	17000	1700	17000	34000
1800	18000	1800	18000	36000
1900	19000	1900	19000	38000
2000	20000	2000	20000	40000

CITY OF BOSTON SANITARY DISTRICTS 1929



APPENDIX E.

REPORT OF THE DIVISION ENGINEER OF THE
SEWER DIVISION.

BOSTON, January 1, 1930.

MR. JAMES H. SULLIVAN,
Commissioner of Public Works.

DEAR SIR,—I submit herewith statement of the activities and expenditures of the Sewer Division for the year ending December 31, 1929.

During the fiscal year 1929 there were built by contractors, day labor and private parties, 20.37 miles of sewers and surface drains throughout the city. There was 0.28 mile of sewers and surface drains rebuilt or abandoned, making a net increase for 1929 of 20.09 miles. This, added to the existing 1,048.80 miles of common sewers and surface drains, together with the 30.93 miles of intercepting sewers, makes a grand total of 1,099.82 miles of common and intercepting sewers belonging to the City of Boston and under the care of the Sewer Division on January 1, 1930.

In addition to the sewers belonging to the City of Boston, there are also state or metropolitan sewers located within the city limits, as follows:

North Metropolitan Sewerage System.—1.653 miles in Deer Island; 5.467 miles in East Boston and 3.292 miles in Charlestown — a total of 10.412 miles of sewers discharging into the harbor at Deer Island.

South Metropolitan Sewerage System.—1.50 miles in the Back Bay; 6.035 miles in Brighton; 2.87 miles in Dorchester; 4.527 miles in Hyde Park; 1.430 miles in Roxbury and 7.643 miles in West Roxbury — a total of 24.005 miles of sewers discharging into the harbor at Nut Island, all of which belong to the state and are under the control of the Metropolitan District Commission. All the city sewers in East Boston and Charles-

town drain into the North Metropolitan System, and all of Brighton and Hyde Park and portions of the Back Bay, Dorchester, Roxbury and West Roxbury drain into the South Metropolitan System.

Five hundred and sixty-seven (567) catch-basins were built or rebuilt and 72 abandoned or removed during the year, making a total of 19,035 catch-basins under the care of the Sewer Division on January 1, 1930, and 8,494 catch-basins and 141 drop inlets were cleaned by contract, the total amount of material removed therefrom being 30,522.58 cubic yards.

Two thousand three hundred and sixty-seven (2,367) permits have been issued as follows: 649 to district foremen and contractors for new construction work, and 1,718 permits were issued to drain layers for laying new house drains or repairing old ones.

Entrance fees amounting to \$8,463.12 have been deposited with the City Collector for collections from the estates upon which no sewer assessment was ever paid, in accordance with the City Ordinances of 1910, chapter 9, section 10.

One thousand seven hundred and sixty-seven (1,767) complaints on flooding and other causes have been investigated, and written reports made thereon, and gasolene and sand traps in 250 garages have been inspected, and notices mailed to owners where defects were found. One thousand one hundred and eighty-one (1,181) hotels and restaurants have been inspected to ascertain the condition of grease traps if found installed.

Plans for the assessment of estates for sewer construction have been furnished to the Board of Street Commissioners, representing 48,276.80 linear feet of sewers and appurtenances, costing \$289,531.41.

Three thousand two hundred and thirty (3,230) municipal liens have been reported to the City Collector, in accordance with chapter 60, section 23, of the General Laws, and in addition there were six thousand five hundred (6,500) reported upon orally upon persons making verbal requests at the Sewer Division office.

Five hundred and six (506) notices have been mailed to abutters in conformity with section 8, chapter 9, of the Ordinances of 1910, notifying them of new sewer construction.

The principal sewerage works built, together with those recommended for the coming year, are as follows:

CITY PROPER.

Changing the harbor lines of the Charles river and the street widenings and extensions in the vicinity of the North Station has resulted in the construction of concrete overflows in Causeway street and Nashua street, and a concrete combined sewer in Lowell street, with the necessary weirs and tide-gate chambers. The 4-foot by 4-foot wood overflow under the North Station and the 2-foot by 3-foot wood overflow from Nashua street at Minot street were abandoned, and the 3-foot 4-inch by 4-foot 3-inch wood overflow at Lowell street was rebuilt.

Sewerage works are recommended in Alleys No. 521, 523, 525 and 541, which are low alleys and should be connected with the South End low level system; in Alley No. 453 and outlet in Alley 448, Cumberland street and Norway street; in Alley No. 456; in Clarendon street, at Stuart street; in Medford street, to replace an old wood sewer and for the further extension of the Nashua street overflow to the new line of the Charles river.

ROXBURY.

A pipe sewer was built in Kilmarnock street to accommodate a large public garage, and a surface drain in Hemenway street in advance of permanent pavement.

Sewerage works are recommended in Kilmarnock street and Van Ness street which have been laid out under chapter "393" of the Acts of 1906; in Alley No. 817; for rebuilding along the line of May Woods brook and the extension of Dorchester brook overflow east of Massachusetts avenue.

SOUTH BOSTON.

On petition of the abutters a sanitary sewer was built in I street, from East Fourth street to Minnie court.

The D street and Damrell street overflow should be extended under the Midland Division tracks and connected with a section already built by the New York, New Haven & Hartford Railroad. Pipe sanitary sewers are recommended in private land in the rear of 508 and 538 East Broadway and in Ward court.

EAST BOSTON.

The 12-foot by 10-foot reinforced concrete overflow for the Porter street district, authorized by the Massachusetts Legislature under chapter 259 of the Acts of 1926 was completed on June 3, 1929. A sewer petitioned for in Milton street; a surface drain in St Andrew road in advance of street construction under chapter "393" of the Acts of 1906, and a surface drain in Gladstone street for the general improvement of the systems were all completed during the year.

Sewerage works are recommended in Gladstone street, Everett street and in Marginal street, between Cottage street and Orleans street and outlet into Commonwealth Dock.

CHARLESTOWN.

The only sewerage works constructed in this district were of a minor nature, required to improve the functioning of the existing system.

A new sanitary sewer should be built in Wallace court and for the general improvement of the system sewerage works are recommended in Chestnut street, Monument square and private land off Alford street.

BRIGHTON.

On petition of the abutters, sanitary sewers were constructed in Chiswick road, Kenrick street, Lyne road and Linden street. For the general improvement of the system, surface drain outlets were built in private land off Foster street, Corey street and Cambridge street. Surface drains in advance of new street construction or repavement were built in Trapelo street, Willoughby street, Leamington road, Brayton road and Bostonia avenue. The separate system of drainage work in advance of chapter "393," street construction or work on petition of the abutters was built in Vinal street, Chestnut terrace, Chiswick terrace, Chiswick Road West, Brock street, Warren street, from Woodstock avenue to Brookline line; Warren street, from Cambridge street to Monastery road, Jordan road, Ryder Hill road and Hano street and private land. A sanitary sewer was reconstructed in Commonwealth avenue, between Linden street and Harvard avenue, and a surface drain was built in Washington street and sewers by

private parties were built in Aladdin court, Montcalm avenue and Eaton street.

To improve the drainage for the new fire station in Chestnut Hill avenue sewerage works are proposed in Foster street, private land, Wiltshire road, Portina road, Hatherly road and Chestnut Hill avenue. Sewerage works in advance of chapter "393," Acts of 1906, street constructions are proposed in Wadsworth street, Hartley terrace, South Crescent circuit, Regal street and Harriet street. The construction work planned for Pratt street and outlet in private land, the easterly branch of Shepard brook and in Dustin and Cambridge streets are important projects for the general drainage improvement for three sections of Brighton.

WEST ROXBURY.

On petition of the abutters sanitary sewers were built in Elmwood street, Washington street, Hodgdon terrace, Dunbar street, Weld street, Bates street, Alpheus road, Weeks avenue, Mansfield street, Washington Heights avenue, Hillside avenue, Leland street, Lennoco road, High View avenue, Rockwood street, Westbourne terrace and the Weld Park outlet in the Arnold Arboretum and West Roxbury Parkway, to drain a large part of West Roxbury and Brookline. Sanitary sewers and surface drains were built in Reyem circle, Forest Hills street, Martin street, Sanborn avenue, Winslow street, Burard street, Pond circle, Welles Park, Centre terrace and private land, Lark street, Robin street and Bogandale road. Surface drains were built in advance of permanent pavement in Cornell street, Morton street, Gardner street and La Grange street, and in advance of street construction under chapter "393" of the Acts of 1906 in Elven road, Manthorne road, Pinedale road, Rustic road, Eastbourne street and outlet in Beech street, Dent street, Pershing road, Roseway street, Manthorne road, Avalon road and outlet in Addington road and Corey street, Vale street, Mendelssohn street, Haydn street, Brahms street, Liszt street, Ashcroft street, Brookley road, Averton road, Cedrus avenue, Hillview avenue, Rodman street, Mosgrove avenue and outlet in Washington street and Leshar street.

Baker street, from the Metropolitan Sewer to Keith

street, Centre street, between the Dedham line and 500 feet south of Linden road. The Dale street outlet to Providence street, Metropolitan avenue, between Dale street and Maynard street; Washington street, between Grove street and Cottage avenue; Canterbury street, from Paine street to existing sewer, and several streets and outlets in both the Weld Park and German-town districts are some of the many streets for which petitions for sewerage works have been received. Weld street, Stratford street, Robin street, Park street, Hemlock street and Schirmer road are recommended for sewerage works in advance of street construction.

DORCHESTER.

A special appropriation for the improvement of the sanitary conditions in Savin Hill Bay was authorized by the Massachusetts Legislature under chapter 239 of the Acts of 1929. Construction work on section one is 45 per cent completed and on section three about 5 per cent completed and the contract for the other two sections are expected to be awarded during the coming year. The widenings of Oakland and Ashland streets under a special act of the Legislature have required sewers and surface drains.

In advance of street construction under chapter "393" of the Acts of 1906, sewers and surface drains have been built in Ashton street, Columbine street, Duke street, Milton avenue extension, Regis road and Sharp street, and outlet and surface drains only in Mt. Bowdoin terrace, Bateswell road, Burgoyne street, Helena road, Wilcox road, Sedalia road, Hazleton street, Codman Hill avenue, Hurlcroft avenue, Mercier avenue, Milton street, and outlet in Hallet-Davis street, Marsh and Hallet streets, Rector road, Donald road, Supple road and Truxton street.

Permanent street pavement work required sewers and surface drains in three portions of Morton street and in Washington street, from Valley road to Mora street, and a surface drain in River street, from Idaho street to Groveland street.

On petition of the abutters, sanitary sewers were built in Kennebec street, Oldfields street, Manor street, Rich street, Rosslerin street, Columbia Park and Southern Artery, between Adams and Branton streets and

surface drains built in Southern Artery and Stone terrace and Oakland brook, Favre street and private land between Bismarck and Favre streets.

Private parties built sewers in Mercier avenue, Violante street and in passageway from Parkman street, and a sewer and surface drains in Oakland place.

A surface drain was built in Hillsboro road and a sewer and surface drain in the passageway from Duke street.

In addition to completing the Savin Hill Bay sewerage works, it is recommended that sewerage works be built in Old Colony terrace, Lauriat street, Rhoades street, Devon street, Strathcona road, Goodale road, River street, between Duxbury road and Mattapan square, Dudley street, between Columbia road and Folsom street, and the extension of Oakland brook in private land to Messinger street.

HYDE PARK.

The permanent pavement construction required a sanitary sewer in River street, at Osceola street, and a surface drain in Greenwood avenue and River street, at Blake street and Agnes avenue. The sanitary sewers in Wood avenue and Thatcher street were built by private parties and the sewer in Radcliffe road was rebuilt by the city. On petition of the abutters, sanitary sewers were constructed in Baldwin street, Clay street, Summer street, Bald Knob road, Rosemont street and private land, and surface drains in Central avenue and River street at Roxanna street. Sewerage works are proposed in this district as follows: In Business street, Barry street and outlet in private land; Water street, Central avenue and Frazer street.

CALF PASTURE PUMPING STATION.

The periodic cleaning of No. 1 and No. 2 pump wells, a new chain link wire fence along the northerly side of the grounds, pointing the stone work in the main building, repairs to boiler combustion chambers and at the west shaft house, new impellers and rings for No. 1 and No. 2 pumps and dredging the channel and shoal were the principal items of work done at the pumping station.

It is recommended to provide four new electric pumps and motors to take the place of No. 3 and No. 4 engines, to place two motor-operated gates on the nine-foot

sewers, to electrify the filth hoist machinery and provide new sludge removal facilities for the deposit sewers.

UNION PARK STREET PUMPING STATION.

A new ventilator was installed and repairs were made to the doors and windows. A new pump for clearing the station in case of flooding and mechanical rakes for the screens are recommended.

FENS GATE HOUSES.

New control mechanism, a new conduit and wiring for gate No. 1, a new pinion for gate No. 3 and repairs to the ventilator and roofs were the principal work done at these gate houses. New gates and frames are required in the by-pass channel.

MOON ISLAND.

New H-beams were placed in the boat chamber and the setting of posts for Causeway fence was completed on the southerly side. It is recommended that the building at the east shaft be removed, the shaft be encased in concrete, rip rap placed and grading be done around it; also that a new concrete floor be placed in the gallery of the long-gate house.

Respectfully submitted,

THOMAS F. BOWES,
Division Engineer.

SEWER DIVISION.

The work of the Sewer Division is carried on under chapters 27 and 39, Revised Ordinances of 1925, and the following statutes:

Chapter 426, 1897, as amended by 450, 1899, and 268, 1903.

Chapter 283, 1903, as amended by 464, 1907.

Chapter 550, 1907.

Chapter 424, 1908.

Chapter 514, 1908.

Chapter 74, Special Acts of 1918.

THE DUTIES OF THE SEWER DIVISION.

1. Preparation of plans for sewerage works.
2. Construction and maintenance of all sewerage works.
3. Investigation of complaints in regard to defective drainage.
4. The granting of permits for sewer construction.
5. The preparation of plans for the assessment of the cost of sewer construction.
6. The examination of the plans of other corporations proposing to construct works in the public streets with reference to their probable interference with sewerage works.

Total number of permanent employees on pay roll December 31, 1928	336
Total number of permanent employees on pay roll December 31, 1929	347
Total amount of weekly pay roll for the week ending December 31, 1928	\$13,034 37
Total amount of weekly pay roll for week ending December 31, 1929	\$14,423 20
Total amount of monthly pay roll December 31, 1928	\$100 00
Total amount of monthly pay roll December 31, 1929	\$100 00

* Total amount of monthly pension roll December 31, 1928:	
Veterans	\$127 00
Laborers	\$54 00
Total amount of monthly pension roll December 31, 1929:	
Veterans	\$6 00
Laborers	\$60 00
Average weekly pay roll including monthly roll and exclusive of pension roll for fiscal year charged as follows:	
Maintenance	\$8,529 45
Construction	\$4,859 67
Average number of permanent men employed	341
Number of men on pension roll December 31, 1928:	
Veterans	2
Laborers	2
Number of men on pension roll December 31, 1929:	
Veterans	1
Laborers	2
Rate of wages paid to common laborers	\$5 00

*Chapter 32, General Laws (veterans), chapter 413, Acts of 1911, and amendments thereto (laborers).

Financial Statement from January 1, 1929, to December 31, 1929.

OBJECT.	Balance on Hand Jan. 1, 1928.	Appropriations, Loans and Revenue.	Transfers to	Transfers from	Total Credits.	Expenditures during the Year 1929.	Balance on Hand Dec. 31, 1929.
Sewer Division.....	.....	\$722,185 08	.....	* \$5,121 26	\$717,063 82	\$716,638 53	† \$425 29
Sewerage Works.....	\$238,288 77	1,005,608 88	.....	.....	1,243,897 65	1,091,695 92	152,201 73
Savin Hill Bay Sewerage Works, etc.....	.....	495,000 00	.....	.....	495,000 00	38,568 69	† 456,431 31
East Boston Pumping Station and Outlet.....	520,691 61	.....	.....	.....	520,691 61	166,235 25	354,456 36
Totals.....	\$758,980 38	\$2,222,793 96	.....	* \$5,121 26	\$2,976,653 08	\$2,013,738 39	\$963,514 69

* Public Welfare Department, Central Office.....

\$5,121 26

† To City Treasury.....

425 59

‡ \$290,000 authorized but not issued of this amount.

MAINTENANCE EXPENDITURES JANUARY 1, 1929, TO DECEMBER 31, 1929.

SEWER DIVISION.

Improved Sewerage.

Pumping Station, Calf Pasture, inside	\$121,729 73	
Pumping Station, Calf Pasture, outside	31,230 35	
Pumping Station, Calf Pasture, engines	50,989 00	
Pumping Station, Calf Pasture, boilers	21,567 38	
Pumping Station, Union Park street	9,521 42	
Pumping Station, Summer street	2,166 51	
Pumping Station, Hyde Park	1,795 27	

\$238,999 66

Moon Island 26,553 23

Main and intersecting sewers 24,287 41

\$289,840 30

Miscellaneous Charges.

Maintenance, Stony brook	\$3,436 12	
Cleaning catch-basins	117,534 97	
Yards and lockers	695 41	
Employed at yards	45,089 71	
Automobiles	\$63,830 53	
Teaming	7,529 08	

\$71,359 61

Less amount earned by service teams and auto trucks 63,654 65

7,704 96

Cleaning, sewers 68,604 27

Office salaries 44,791 63

Office expense 3,394 67

Repairing department buildings \$3,271 52

Repairing catch-basins, South Boston 3,940 72

Repairing catch-basins, East Boston 2,077 86

Repairing catch-basins, Charlestown 1,749 66

Repairing catch-basins, Brighton 2,190 01

Repairing catch-basins, West Roxbury 4,995 53

Repairing catch-basins, Dorchester 7,817 12

Repairing catch-basins, Hyde Park 764 67

Repairing catch-basins, Roxbury 4,560 87

Repairing catch-basins, City Proper 6,691 62

Repairing sewers, South Boston 746 61

Repairing sewers, East Boston 1,257 77

Repairing sewers, Charlestown 1,850 31

Repairing sewers, Brighton 2,080 96

Repairing sewers, West Roxbury 5,058 43

Repairing sewers, Dorchester 12,262 30

Repairing sewers, Hyde Park 2,706 18

Repairing sewers, Roxbury 2,779 71

Repairing sewers, City Proper 5,830 97

72,632 82

Carried forward \$653,724 86

<i>Brought forward</i>	\$653,724 86
Monthly roll	100 00
Pension roll (veterans)	1,113 00
Pension roll (laborers)	712 00
Annuities	351 00
Fuel and oil	5,625 93
Hardware, tools, etc.	7,075 92
Engines and boilers	55 38
Sundries and miscellaneous charges	31,375 42
Telephones	534 96
House connections	13,483 50
Rubber goods	1,085 72
Gatehouses, Fenway	3,398 52
Stock	13,760 13

\$732,396 34

Credit.

Stock transferred and used in construction	15,757 81
--	-----------

\$716,638 53

Charges to Various Parties for Work Done and Material Furnished, etc.

Louis Madel	\$9 83
Charles Dorr	15 00
Coleman & Gilbert	15 00
Broslin & Co.	15 00
Manhattan Realty Company	15 00
T. Cucierce	15 00
George DeBliss	15 00
Ralph Smith	28 75
Manhattan Realty Company	5 00
Philip Copello	13 75
A. G. Tomasello	73 50
M. Berry	15 00
C. A. Hill	35 00
J. K. McLean	15 00
D. E. Cline	15 00
E. V. T. Nelson	4 65
S. Perlmutter	9 68
W. R. Sundal	15 00
C. A. Hill	22 83
E. Van Little	15 00
Browning & Reilly	15 00
Metropolitan District Commission	11,998 37
Albanian Surety Company	11 63
Checker Taxi Company	15 00
Philip Copello	3 63
Pulman Doyle	10 00
P. Dasse	50 00
M. E. Hurley	15 00
Waldorf System	15 00
Mrs. N. Hoar	8 59
S. Harlen Estate	15 00
Beacon Oil Company	7 50
A. Miller	15 00
M. Bronstein	15 00
F. W. Mason	27 65
William Perry	12 00
T. Deniskey	19 00
C. A. Warren	15 00

Carried forward \$12,636 36

<i>Brought forward</i>	\$12,636 36
Mrs. J. P. Conway	15 00
Mark Alramo	15 00
Paul Howard	15 00
Cannes Sea Grill	15 00
Mrs. Borgson	5 30
Catherine Kelley	5 00
Doherty & McLaughlin	7 63
DeBlois & Maddison	15 00
Maria L. Bona	119 94
John M. Conlon	85 00
William W. Babcock	110 00
Star Realty Company	99 42
Dominick Belle	27 00
H. F. Armington	2 40
J. E. Burke	30 00
Anne Glass Company	20 00
B. Gladberg	15 00
William Boos	15 00
August Nelson	10 00
Checker Taxi Company	10 00
F. H. Gifford	5 76
Edward Krutchev	4 50
Browning & Reilly	15 00
D. Chataskey	200 00
Bassing & Marshall	15 00
William Perry	23 00
M. Thompson	25 00
Rose Gargan	5 00
William Perry	55 00
M. Cahill	35 00
James Newman	5 82
Checker Taxi Company	15 00
Coleman & Gilbert	15 00
Eng. Cons. Co.	58 07
Peter Barra	8 79
Samuel Walsh	15 00
Walter O'Malley, Law Department	1 00
Thomas J. Burke	55 00
H. Goldman	12 25
C. A. Warren	15 00
R. F. Warren	8 75
William Joyce	22 23
Checker Taxi Company	15 00
Mandy Newcome	3 38
Fred H. Desmond	5 15
W. W. & C. R. Noyes	15 00
Anthony Vereton	8 00
J. H. Sullivan	9 26
Richard A. Club	27 25
P. J. O'Leary	46 02
Rogers & Sullivan	21 92
John Williams	9 32
D. O'Connell	186 31
H. H. Harden	69 04
A. Cefalo	5 75
J. Todesca	35 00
C. W. Hardy	17 26
F. L. Lowe	48 21
Hurley-Driscoll Company	75 00
Patrick J. O'Leary	46 57
<i>Carried forward</i>	\$14,531 76

<i>Brought forward</i>	\$14,531 76
D. F. Diggins	9 32
R. Carriedo	39 00
M. DeSisto	197 93
W. J. Burke	15 62
Appel & O'Toole	20 70
J. Violante	13 15
William J. Inchs	17 25
Maryland Casualty Company	4,162 49
Appel & O'Toole	224 19
R. Carrido	54 24
M. A. Christman	37 93
DeCristofaro Brothers	5 48
Tony Brookhouse	58 65
Appel & O'Toole	137 05
Richard Clark	27 95
Richard Clark	10 00
Sebastian Guiseppi	17 53
Total	\$19,580 24
Uncollected	133 14
	\$19,447 10
Bills of 1928 paid in 1929	170 40
Total amount collected	\$19,617 50
Entrance fees charged and collected in accordance with Ordinances of 1927, chapter 27, section 10	<u>\$8,463 42</u>

Sewer Division. — Maintenance Expenditures, Detail, 1929.

ACCOUNTS.	Total Expendi- tures.	Labor.	Teaming.	Stock.	Contracts.	Miscellaneous.
Automobiles (27)	\$63,830 53	\$27,869 70	.....	.....	.....	Repairs \$17,993 08 Equipment 15,890 49 Supplies 1,985 76 Fees 91 50 \$35,960 83
Cleaning catch-basins	117,534 97	37,935 91	\$27,181 01	\$17 20	\$52,056 16	Advertising \$26 25 Salt 25 69 Dumping 292 75 344 69
Cleaning sewers	68,604 27	38,341 95	15,328 20	17 99	14,815 88	Advertising \$33 75 Dumping 66 50 100 25
Engines and boilers	55 38	.....	.....	.....	.....	Waste 55 38
Employed at yards	45,089 71	45,089 71	.....	.....	.....	Lanterns \$21 60 Coal 914 72 Gasoline and oil 4,689 61 5,625 93
Hardware and tools	7,075 92	.....	.....	.....	.....	Hose \$1,339 85 Hardware, tools, etc. 5,736 07 7,075 92
House connections	13,483 50	13,201 49	6 63	275 38	.....	Stable goods and supplies, Repairs, wagons and harnesses \$814 48 20 95 Shoeing 477 65 Hired wagons 12 00 1,325 08
Maintenance, Stony brook	3,436 12	1,784 53	278 27	.....	1,373 32	Stationery and supplies \$2,654 46 Miscellaneous 530 21 3,194 67
Office expense	3,394 67	210 00	.....	.....	.....

Sewer Division.— Maintenance Expenditures, Detail, 1929.— Concluded.

ACCOUNTS.	Total Expendi- tures.	Labor.	Teaming.	Stock.	Contracts.	Miscellaneous.
Office salaries.....	\$44,791 63	\$44,791 63				(133 pairs boots..... \$663 46 12 pairs mitts..... 35 46 129 coats..... 352 32 } \$1,085 72 68 hats..... 24 48 Repairs..... 10 00)
Rubber goods.....	1,085 72					
Stock.....	13,760 13	2,187 95	\$218 44	\$16,353 74		
Yard and locker.....	695 41					Gas and electricity..... \$150 99 Miscellaneous..... 345 17 Ice..... 93 00
Telephones.....	534 96					589 16
Back Bay Fens, gatehouses.....	3,398 52	2,294 61				534 96
Sundries.....	31,375 42	26,173 34	184 33	54 00		Electricity..... \$931 91 Repairs, etc..... 172 00
Repairing department buildings.....	3,271 52	2,348 21	47 75	663 14	\$212 42	Repairs, etc..... \$1,970 10 Transportation..... 1,383 64 Workmen's Compensa- tion..... 1,610 01
Repairing catch-basins, South Boston.....	3,940 72	1,883 41	793 02	851 16	413 13	4,963 75
" " East Boston.....	2,087 86	946 26	289 25	842 35		
" " Charlestown.....	1,749 66	847 63	299 76	602 27		
" " Brighton.....	2,190 01	1,195 70	303 44	690 87		

"	"	West Roxbury...	4,995 53	2,203 55	758 57	1,760 82	272 59
"	"	Dorchester.....	7,817 12	4,975 39	897 58	1,943 15	1 00
"	"	Hyde Park.....	764 67	332 50	112 63	319 54	
"	"	Roxbury.....	4,560 87	2,501 07	1,237 90	818 46	3 00
"	"	City Proper.....	6,691 62	2,281 10	1,874 51	1,855 71	80 25
Repairing sewers, South Boston.....			746 61	414 65	199 58	131 38	1 00
"	"	East Boston.....	1,257 77	706 20	263 25	138 32	150 00
"	"	Charlestown.....	1,850 31	1,134 33	479 39	234 09	2 50
"	"	Brighton.....	2,080 96	654 63	265 65	249 38	911 30
"	"	West Roxbury.....	5,058 43	3,119 35	1,000 38	938 70	
"	"	Dorchester.....	12,262 30	7,398 55	1,426 88	1,917 25	1,519 62
"	"	Hyde Park.....	2,706 18	1,721 77	318 01	474 65	191 75
"	"	Roxbury.....	2,779 71	1,554 50	768 13	367 33	89 75
"	"	City Proper.....	5,830 97	2,536 05	1,331 07	1,283 72	680 13
Annuities.....			351 00				351 00
Pension roll, veterans and laborers.....			1,825 00	1,825 00			
Monthly roll.....			100 00	100 00			
			\$506,210 69	\$287,365 11	\$55,969 89	\$27,800 65	\$72,773 80
Less Credits.							
Teams.....							\$62,301 25
Stock.....			\$63,654 65				
			79,412 46	41,809 96		15,757 81	21,844 69
Totals.....			\$426,798 23	\$245,555 15	\$55,969 89	\$12,042 84	\$72,773 80
							\$40,456 56

MISCELLANEOUS ACCOUNT, DETAIL.

Labor.

Vacations	\$15,683 32	
Sick leave	1,128 99	
Workingmen's compensation . .	1,610 01	
Miscellaneous:		
Inspection — Complaints: Defec-		
tive drainage, prevention of		
gasolene entering common		
sewers.		
General engineering	1,071 77	
	<hr/>	\$19,494 09
Transportation		1,199 64
Repairing streets		2,142 43
Miscellaneous		249 94
		<hr/>
		<u>\$23,086 10</u>

Sewer Division.— Maintenance Expenditures, Detail, 1929.

Accounts.	Total Expenditures.	Labor.	Teaming.	Waste.	Fuel and Power.	Oil and Gasoline.	Packing.	Valves.	Transportation.	Stable.	Pipe Fittings and Miscellaneous.	Autos.
Pumping station, Calf Pasture:												
Inside.....	\$127,937 77	\$38,722 33	.....	\$412 19	\$75,330 90	.....	\$930 27	.....	.....	.....	\$12,542 08	
Outside.....	31,230 35	23,037 64	.....	.....	.....	.....	.....	.....	\$22 20	\$696 33	7,183 90	\$290 28
Engines.....	44,780 96	40,673 97	.....	.....	.....	\$1,329 74	1,493 07	\$988 09	.....	.....	296 09	
Boilers.....	21,567 38	19,602 79	.....	.....	.....	.....	.....	.....	.....	.....	1,964 59	
Moon Island.....	26,553 23	22,602 98	.....	.....	472 50	442 90	.....	.....	142 91	.....	2,054 86	837 08
Main and intercepting sewer.....	24,287 41	16,186 13	\$7,565 75	.....	.....	.....	.....	.....	.....	.....	535 53	
Pumping stations:												
Union Park street.....	9,521 42	6,629 89	119 02	.....	1,761 22	.....	.....	.....	.....	.....	1,011 29	
Summer street.....	2,166 51	1,442 06	.....	.....	724 45	.....	.....	.....	.....	.....	.....
Hyde Park.....	1,795 27	1,696 85	.....	.....	98 42	.....	.....	.....	.....	.....	.....
Total.....	\$289,840 30	\$170,594 64	\$7,684 77	\$412 19	\$78,387 49	\$1,772 64	\$2,423 34	\$988 09	\$165 11	\$696 33	\$25,588 34	\$1,127 36

Recapitulation — Maintenance Detail, 1929.

	Improved Sewerage.	Outside Improved Sewerage.	Totals.
Labor.....	\$170,594 64	\$287,265 11	\$457,859 75
Contracts.....		72,773 80	72,773 80
Teaming, hired and city.....	7,684 77	55,969 88	63,654 65
Waste.....	412 19	55 38	467 57
Fuel and power.....	78,387 49	1,997 62	80,385 11
Oil and gasolene.....	1,772 64	4,689 61	6,462 25
Packing.....	2,423 34		2,423 34
Valves.....	988 09		988 09
Transportation, etc.....	165 11	1,383 64	1,548 75
Horses, etc.....	696 33	7,529 08	8,225 41
Pipe fittings and miscellaneous.....	25,346 08		25,346 08
Telephones.....	242 26	534 96	777 22
Automobiles, repairs and supplies.....			37,088 19
Stock supplies and miscellaneous.....		38,050 78	38,050 78
	\$289,840 30	\$506,210 69	\$796,050 99
CREDITS.			
	Improved Sewerage.	Outside Improved Sewerage.	
Autos-teamsters....	\$781 52	\$62,873 13	
Stock.....	125 56	15,632 25	
	\$907 08	\$78,505 38	
	907 08	78,505 38	79,412 46
Totals.....	\$288,933 22	\$427,705 31	\$716,638 53

SUPPLIES AND FUEL, ENTIRE SERVICE.

Supplies.

2,664 pounds grease, 18 cents.
 3,370 pounds waste, 13 to 17 cents.
 935 pounds cotton rags, 15 and 16 cents.
 4,231.2 gallons engine oil, 19.3 cents.
 1,075.8 gallons cylinder oil, 27.5 cents.
 7 gallons air cylinder oil, 70 and 80 cents.
 51 gallons sperm oil, \$1.25.
 163.7 gallons turbine oil, 49.5 cents.
 10 gallons lard oil, \$1.75.
 1,950 gallons kerosene oil, 11 to 12 cents.

Fuel.

1,107,004.64 gallons fuel oil, \$42,887.82.
 140.065 tons anthracite, \$1,834.11.

Cleaning Catch-basins, 1929.— (By Contract.)

Districts.	Contractor.	Start and Finish of Work.	Price per Cubic Yard.	Cubic Yards Excavated by Contractor.	Contractor Received by Districts.	Total Catch-basins Cleaned.	Total Drop Inlets Cleaned.	Average Cubic Yards per Basin.	Total Cost of Inspection.	Average Total Cost to City per Drop Inlet.
1. City Proper.....	Massachusetts Company.....	(June 3, 1929) (Dec. 14, 1929)	\$1 45	8,791.75	\$12,747 97	2,484	38	3.54	\$1,842 32	\$5 39
2. Roxbury.....	Ed. J. Byrne.....	(June 12, 1929) (Oct. 22, 1929)	1 48	4,030.96	5,965 82	1,116	12	3.61	824 38	6 02
2A. Roxbury South.....	Massachusetts Company.....	(June 3, 1929) (Dec. 14, 1929)	1 58	5,004.75	8,525 23	1,399	5	3.58	1,025 62	6 80
3. South Boston.....	Ed. J. Byrne.....	(June 12, 1929) (Oct. 22, 1929)	1 48	3,310.42	4,809 41	937	15	3.53	695 44	5 88
4. Charlestown and East Boston....	P. and O. Construction Company.....	(June 3, 1929) (Nov. 30, 1929)	1 70	{ 1,152.80 2,310.84 }	{ 1,959 76 3,928 43 }	{ 316 619 }	{ 3 12 }	{ 3.65 3.73 }	{ 693 98 1,136 66 }	{ 6 93 6 59 }
5. Dorchester and Hyde Park.....	A. A. R. Doyle.....	(June 3, 1929) (Nov. 14, 1929)	1 65	{ 4,564.63 965.51 }	{ 7,531 63 1,533 08 }	{ 1,250 263 }	{ 29 14 }	{ 3.64 3.67 }	{ 1,136 66 \$6,218 40 }	{ 6 59 \$5,388 73 }
Totals.....				30,131.66	\$47,151 33	8,384	128	.....	
Total catch-basins cleaned.....			8,384	Total cost: Contractors.....		\$47,151 33				
Total drop inlets cleaned.....			128	Inspection.....		6,218 40				
				Advertising.....		19 00				
						<u>\$53,388 73</u>				

Total cubic yards material removed, 30,131.66.
Average cost per basin, including drop inlets, \$6.27.

Average cubic yards material removed per basin, 3.539.
Average cost per cubic yard removed, \$1.77.

Sewerage Works.

Expenditures, January 1, 1929, to December 31, 1929.

ACCOUNTS.	Labor.	Teaming.	Materials.	Miscellaneous.	Paid to Contractors.	Totals.
Engineers' salaries.....	\$128,979 48					\$128,979 48
Engineers' expense.....	8,585 54	\$470 76	\$78 76	\$5,343 36	\$3,309 25	17,787 67
Pumping station.....					3,310 20	3,310 20
Sundries.....	1,577 77		20,825 80	1,730 96	13,446 00	37,580 53
Land-takings and court executions.....				2,629 50		2,629 50
New manholes, entire city.....	11,047 99	2,575 12	4,207 96	369 82	11,714 64	29,915 53
New catch-basins, South Boston.....	2,197 44	486 64	1,227 87	16 50	4,275 86	8,204 31
New catch-basins, East Boston.....	117 42	39 00	370 60		3,248 88	3,775 90
New catch-basins, Charlestown.....					346 50	346 50
New catch-basins, Brighton.....	3,103 41	600 76	1,722 96		3,508 69	8,935 82
New catch-basins, West Roxbury.....	5,763 60	788 40	2,932 82		7,176 78	16,661 60
New catch-basins, Dorchester.....	4,439 54	813 31	2,414 79		9,463 68	17,131 32
New catch-basins, Hyde Park.....	1,355 13	152 39	726 47		5,858 43	8,092 42
New catch-basins, Roxbury.....	4,980 67	1,528 57	1,910 53	46 50	1,563 98	10,030 25
New catch-basins, City Proper.....	5,519 37	1,340 31	2,426 36	116 01	3,644 99	13,047 04
Sewers built in entire city.....	59,508 06		22,888 45	20,000 00	682,871 34	785,267 85
Totals.....	\$237,175 42	\$8,795 26	\$61,733 37	\$30,252 65	\$753,739 22	\$1,091,695 92

Sewerage Works, Construction, January 1, 1929, to December 31, 1929, Inclusive.

Location.	Begun.	Finished.	Built by.	Length, (Feet.)	Character.	Amount Expended in 1929.
SOUTH BOSTON.						
G street, from Columbia road to a point 80 feet northwesterly.	Nov. 19, 1929	Dec. 19, 1929	J. Williams.	.....	.....	\$1,480 40
1 street, from East Fifth street.	June 20, 1929	Aug. 20, 1929	M. Guarino.	35.25 128.15	15" pipe, sewer. 12" pipe, sewer.	1,310 48
EAST BOSTON.						
St. Andrew road, between Waupello road, etc.	Dec. 12, 1928	Jan. 24, 1929	C. Russo.	420.92 150.00	10" pipe, surface drain. 12" pipe, surface drain.	3,519 44
Gladstone street and Milton street.	July 11, 1929	Aug. 12, 1929	L. Balboni.	298.20 250.02 270.35	10" pipe, sewer. 12" pipe, surface drain. 10" pipe, surface drain.	2,684 68
BRIGHTON.						
Warren street and in Corey road and Jordan road.	Sept. 9, 1929	Nov. 2, 1929	Anthony Cefalo.	416.30 305.80 418.18	10" pipe, sewer. 10" and 12" pipe, sewer. 12" pipe, surface drain.	3,020 73
Ryder Hill road and Brighton Hill road.	Oct. 27, 1929	Dec. 30, 1929	L. Balboni.	166.42 159.06	10" pipe, sewer. 10" pipe, surface drain.	997 34
Causeway street.	Feb. 11, 1929	May 6, 1929	V. Barletta.	.....	.....	14,067 91
Commonwealth avenue and Linden street.	Jan. 28, 1929	Jan. 28, 1929	C. Struzziery.	119.25	10" pipe, sewer.	
Private land, from Foster street 600 feet northwesterly.	Jan. 31, 1929	March 22, 1929	C. Struzziery.	341.98 22.50	24" pipe, surface drain. 10" pipe, surface drain.	2,167 96 1,397 90
Kenwick street, Brook street and Linden street.	June 6, 1929	Aug. 24, 1929	T. J. O'Connell.	708.88 593.88	10" pipe, sewer. 10" pipe, surface drain.	4,296 44
Brayton road, between Brick avenue and Newton line.	June 10, 1929	Aug. 16, 1929	J. Williams.	215.25 840.74 371.41	15" pipe, surface drain. 12" pipe, surface drain. 10" pipe, surface drain.	5,582 25

Sewerage Works, Construction, January 1, 1929, to December 31, 1929, Inclusive.— Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1929.
<i>BRIGHTON.— Continued.</i>						
Lexington road.....	May 1, 1929	June 13, 1929	P. Guarano.....	767 25	12" pipe, surface drain.....	\$3,922 51
Washington street, between Monastery avenue.	June 24, 1929	Aug. 12, 1929	V. Barletta.....	788.95 325.45	24" pipe, sewer, surface drain..... 18" pipe, surface drain.	10,588 14
Vinal street, between Woodstock street and Allston street.	July 2, 1929	July 22, 1929	Charles Russo.....	325.45 359.80 8	10" pipe, sewer..... 10" and 12" pipe, surface drain. 15" pipe, surface drain.	2,736 43
Warren street, between Cambridge street and Monastery road.	Aug. 8, 1929	Oct. 22, 1929	Charles Russo.....	621.20 10.05 11 811.76	15" pipe, sewer..... 15" pipe, surface drain. 24", cast-iron pipe, surface drain. 1', 3' concrete surface drain.	12,641 38
Lyman road, from Union street, south- westerly.	Sept. 18, 1929	Oct. 19, 1929	J. J. Conway.....	271.60	10" pipe, sewer.....	1,792 56
Chiswick street, between Englewood road, etc.	Aug. 7, 1929	Sept. 3, 1929	L. J. Nawn Company.....	139.60	10" pipe, sewer.....	1,473 61
Private land, Havre street, etc.....	Sept. 9, 1929	Jan. 9, 1930	Joseph Todesco.....	125.11 219.67 83.64 907.70	10" pipe, sewer..... 10" pipe, surface drain. 12" pipe, surface drain. 1', 10" by 2', 6" concrete conduit.	16,926 09
Willoughby street, Trapello road, etc.....	Sept. 9, 1929	Oct. 8, 1929	N. De Bartoletto.....	183.10 492.34	12" pipe, surface drain..... 10" pipe, surface drain.	13,725 94
Bostonia avenue, between Brick avenue.....	Sept. 23, 1929	Oct. 16, 1929	A. Piarelli.....	895.97	10" pipe, surface drain.....	2,930 14
Bellamy street, between Boston street and Market street.	Nov. 2, 1929	Dec. 18, 1929	M. F. Gaddis.....	361.55 270.85 144.20	12" pipe, surface drain..... 10" pipe, surface drain. 10" pipe, sewer.	2,777 18

Chestnut terrace and Chiswick terrace, etc.,	March 11, 1929	May	6, 1929	A. Grande & Co.	1,439.72 237 175.80 786.04 224.61	10" pipe, sewer. 18" pipe, surface drain. 15" pipe, sewer. 12" pipe, surface drain. 10" pipe, surface drain.	7,765 19
WEST ROXBURY DISTRICT.							
Rodmean street and Mosgrove avenue, etc.,	Sept. 18, 1929	Oct.	31, 1929	John Williams.	13.65 20 885.23 324.09	10" pipe, sewer. 12" pipe, sewer. 10" pipe, surface drain. 3' by 3' 6" concrete conduit.	8,360 46
Elmwood street, between Glendale road and Baker street.	Dec. 19, 1928	March	22, 1929	A. Grande Company.	341.85	10" pipe, sewer.	5,287 97
Forest Hills circle, private land.	Dec. 27, 1928	April	15, 1929	V. Bartletta Company	591.85 474.99	12" pipe, sewer.	5,287 97
Hodgdon terrace, from existing sewer about 60 feet southwesterly.	March 21, 1929	Sept.	20, 1929	C. Russo.	159.05	8" pipe, sewer.	919 32
Martin street, Bellevue street and La Grange street.	Feb. 19, 1929	April	25, 1929	J. Capone.	279.02 278.74	10" pipe, sewer. 12" pipe, surface drain.	1,779 25
Dunbar street and Manthorne road.	May 1, 1929	Nov.	14, 1929	Charles Russo.	411.45 549.25 185.38	15" pipe, sewer. 12" pipe, surface drain. 10" pipe, surface drain.	5,714 78
Dunbar street, from Garnet road to Willow road.	May 1, 1929	Nov.	14, 1929	J. Todesco.	240.25	10" pipe, sewer.	561 68
Sanborn avenue, between Willow road.	May 6, 1929	July	8, 1929	A. Piatelli.	886.37 884.17	10" pipe, sewer. 10" and 15" pipe, surface drain.	3,885 87
Brookley road and outlet in Brook road.	May 6, 1929	June	13, 1929	A. Grande.	107.40 348.95 365.64 223.85	10" pipe, sewer. 13" pipe, surface drain. 12" pipe, surface drain. 10" pipe, surface drain.	5,203 08
Bogandale road, from Centre street 800 feet southeasterly.	June 1, 1929	Oct.	29, 1929	Patrick Guarino.	794.00 234.45	10" pipe, sewer. 10" pipe, surface drain.	5,203 08
Averton street and Priudale road.	May 14, 1929	Dec.	13, 1929	Charles Russo.	154.21 511.18	15" pipe, surface drain. 10" pipe, surface drain.	2,963 75

Sewerage Works, Construction, January 1, 1929, to December 31, 1929, Inclusive.— Continued.

LOCATION.	Begun.	Finished.	Built by	Length. (Feet.)	Character.	Amount Expended in 1929.
WEST ROXBURY.— Continued.						
St. Alphons road, Weeks avenue, Mansfield street and Bates street.	July 6, 1929	Aug. 15, 1929	Joseph Todesco.....	2,192.35	10" pipe, sewer.....	\$6,082.95
Cornell street.....	April 1, 1929	May 25, 1929	A. Cefalo.....	1,009.56 599.95 269.54	18" pipe, surface drain. 15" pipe, surface drain. 12" pipe, surface drain.	7,738.97
Elven road.....	April 8, 1929	April 18, 1929	Charles Russo.....	159.51 140.05	12" pipe, surface drain. 10" pipe, surface drain.	889.23
Gardner street, Bark street, private land and Robin street.	June 2, 1929	Aug. 8, 1929	A. Cefalo.....	449.17 440.07 271.95 347.29 101.57	10" pipe, sewer. 10" and 12" pipe, surface drain. 18" pipe, surface drain. 13" pipe, surface drain. 10" pipe, surface drain.	8,270.71
Centre street, Weld street, etc.....	July 8, 1928	May 14, 1929	A. Cefalo.....	1,147.14	10" pipe sewer.	19,132.19
Stony brook, section 10A, Roslindale branch of Stony brook, from Toll Gate way to Braden street.			James Coughlin & Sons Company.		Execution of contract.	18,500.00
Rustic road, Manthorne road and outlet in Addington street.	May 23, 1929	Nov. 4, 1929	M. DeSisto.....	94.46 644.10 226.20 1,872.73 382.67	15" pipe, surface drain. 12" pipe, surface drain. 10" pipe, surface drain. 3' concrete surface drain. 2' 6" concrete surface drain.	45,375.28
Rustic road, between Emmons road and Bellevue street.	June 5, 1929	June 27, 1929	A. Cefalo.....	420.18	10" pipe, surface drain.	1,175.94
Morton street, between Norfolk street and Canterbury street.	June 12, 1929	July 27, 1929	Charles Russo.....	454.29 745.53 158.00 152.00	15" pipe, surface drain. 12" pipe, surface drain. 8" pipe, sewer. 12" pipe, surface drain.	9,577.70

Brookley road, between Washington street and Plainfield street.	June 12, 1929	July 10, 1929	A. Grande.....	312. 12 304. 81	10" pipe, sewer, 10" pipe, surface drain.	4,540 54
Eastbourne road and outlet in Birch street,	July 2, 1929	Aug. 28, 1929	C. Struzziery.....	225. 35 1,238. 80	18" pipe, surface drain. 12" pipe, surface drain.	4,902 71
Washington Street Heights, connecting Washington street, 400 feet westerly.	July 2, 1929	Oct. 8, 1929	R o w e Construction Com- pany.	400 00	10" pipe, sewer.	3,685 43
Centre terrace and private land.....	July 26, 1929	Nov. 15, 1929	T. J. O'Connell.....	869. 01 418. 41 21 278. 34 160. 83	10" pipe, sewer. 10" pipe, surface drain. 10" cast-iron pipe, surface drain... 24" pipe, surface drain. 3' 6" concrete conduit.	9,262 63
Weld street, Winslow street and Burard street.	July 2, 1929	Aug. 3, 1929	John Williams.....	1,317 514. 70	10" pipe, sewer. 10" pipe, surface drain.....	5,763 09
Dent street, between Pleasant street and Winslow street.	July 2, 1929	Aug. 3, 1929	C. Russo.....	399. 70 224. 70 226. 60 200. 21	24" pipe, surface drain. 24" pipe, surface drain. 15" pipe, surface drain. 12" pipe, surface drain.	7,563 12
Hillside avenue and Leland street.....	Aug. 2, 1929	Oct. 30, 1929	J. J. Conway.....	160. 23	10" pipe, surface drain.....	1,997 34
Lennoco road, between Orchard avenue and 300 feet northerly; and outlet in Orchard avenue.	Aug. 5, 1929	Nov. 27, 1929	Joseph Capone.....	328 62	10" pipe, sewer.....	3,841 40
Florence street, between Stony brook in Florence street and private land.	Aug. 16, 1929	Sept. 17, 1929	J. Pierce.....	.....	.....	1,615 67
Highland avenue and outlet in Washington street.	Sept. 30, 1929	Jan. 27, 1930	Charles Struzziery.....	239 90 507 85	12" pipe, sewer. 10" pipe, sewer.....	7,718 01
Pershing road, Rosemary street and outlet in Centre street.	Sept. 4, 1929	Sept. 26, 1929	John Williams.....	293. 75 1,464. 15	15" pipe, surface drain. 12" pipe, surface drain.	5,667 32
Weld Park outlet, section 1, in Arnold Arboretum and West Roxbury Parkway.	Sept. 23, 1929	Dec. 2, 1929	A. Cafalo.....	4,032 01	24" pipe, sewer.....	26,713 97
Pond circle, from Pond street about 200 feet northerly.	Oct. 8, 1929	Nov. 2, 1929	Roxbury Construction Com- pany.	194. 49 199. 50	10" pipe, sewer..... 10" pipe, surface drain.	985 65

Sewerage Works, Construction, January 1, 1929, to December 31, 1929, Inclusive.—Continued.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1929.
WEST ROXBURY.—Continued.						
Cedrus avenue and Vale street.....	Oct. 22, 1929	Nov. 12, 1929	Charles Struzziery.....	299.39	12" pipe, surface drain.....	\$1,707 67
Welles park, from Welles street about 230 feet northerly.	Oct. 20, 1929	Nov. 2, 1929	L. Federeo.....	221.80 209.80	10" pipe, sewer..... 10" pipe, surface drain.....	939 76
Brachlins street and Lister street, between Wilbich street and Washington street.	Oct. 28, 1929	Nov. 13, 1929	John Williams.....	758.17 371.91	12" pipe, surface drain..... 10" pipe, surface drain.....	3,762 65
Haydn street, between Nikisch avenue and Washington street.	Oct. 25, 1929	Nov. 14, 1929	L. Balboni.....	212.32 591.81 360.10	16" pipe, surface drain..... 12" pipe, surface drain..... 10" pipe, surface drain.....	3,478 56
Rockwood street, from existing sewer 140 feet northerly.	Oct. 31, 1929	Dec. 21, 1929	Patrick Guarano.....	140.50	10" pipe, sewer.....	1,634 44
Westbourne terrace, from Bourne street 290 feet northerly.	Nov. 13, 1929	Dec. 2, 1929	M. DeSisto.....	259.80	10" pipe, sewer.....	579 60
Moraine street, between Ashcroft street.....	Nov. 26, 1929	Dec. 19, 1929	D. V. Construction Com- pany.	358.45	10" pipe, surface drain.....	888 56
Washington street, between Finchliff avenue,	Feb. 11, 1929	July 3, 1929	L. Balboni.....	855.81 496.40	15" pipe, sewer..... 12" pipe, sewer.....	10,727 17
DORCHESTER.						
Rosserlin street, from Train street to 147 feet westerly.	Dec. 28, 1929	Jan. 6, 1930	C. Struzziery.....	115.30 50	10" pipe, sewer..... 10" pipe, sewer.....	795 90
Walk Hill street and Bateswell street.....	Nov. 1, 1928	Sept. 28, 1929	East Boston Company.....	355 67	Pipe, minor drain..... 12" pipe, surface drain..... 14 catch-basins.	3,742 95
Southern artery and outlet, Stone terrace...	Dec. 18, 1929	Jan. 14, 1930	T. J. O'Connell.....	71.08	24" pipe, surface drain.....	2,216 20

Morton street, between Washington street and Friend street.	Jan. 27, 1929	Aug. 22, 1929	DeCristoforo Bros	332.85 24.30 72 606.50 1,109.20 320.95 207.90	2' 2" U-shaped concrete conduit. 1' 6" by 1' 6" U-shaped concrete conduit. 2' 8" by 2' 8" U-shaped concrete conduit. 15", 12" and 10" pipe, surface drain. 10" and 12" pipe, sewer. 3" 3" concrete conduit. 2' 6" concrete conduit.	21,005 01
Codman Hill avenue, Milton avenue, Hurlcroft avenue and Mercer avenue.	May, 1929	July 9, 1929	Joseph Todesco	290.90 189.80 1,322.20	10" pipe, sewer..... 10" pipe, surface drain. 10" pipe, surface drain. 13 catch-basins.	7,405 59
River street, from Idaho street to Groveland street.	May 16, 1929	June 6, 1929	A. Daddaro	341.60	18" and 15" pipe, surface drain.... 5 catch-basins.	3,141 47
Howard street, between Dudley street and Woodcliff street.	Jan. 12, 1929	Dec. 13, 1929	J. C. Coleman .....	.....	11 catch-basins, 186-foot minor drain.	4,928 20
Morton street, from Old Morton street and Manchester street.	June 6, 1929	July 27, 1929	A. Daddaro	942.45 122.83 66.37 285. 567.35	12" pipe, sewer..... 15" and 12" pipe, surface drain. 3" 3" concrete conduit. 2' 9" concrete conduit. 2' by 2" U-shaped concrete conduit, 6 catch-basins.	11,849 15
Southern Artery, between Adams street and Branton street.	May 15, 1929	June 11, 1929	T. J. O'Connell	823.08	12" pipe, sewer.....	2,776 88
Morton street, between Norfolk street and Canterbury street.	June 3, 1929	July 1, 1929	Charles Russo .....	.....	.....	6,842 96
Columbia park and Washington road.....	May 29, 1929	July 27, 1929	J. Capone	435.85 326.95	10" pipe, surface drain	3,822 25
Howard avenue, between Wayland street and Dunreath street.	Jan. 25, 1929	Dec. 22, 1929	J. C. Coleman	209.76 281.60	15" pipe, surface drain	2,886 09
Oakland brook, in private land, between Bernard street and Favre street.	July 1, 1929	Aug. 22, 1929	L. Balboni	102 137 411 174 19	5' by 4' concrete conduit	7,102 42
					4' 6" circular concrete conduit. 15" pipe, surface drain. 12" pipe, surface drain. 24" pipe, surface drain.	

Sewerage Works, Construction, January 1, 1929, to December 31, 1929, Inclusive.—Continued.

Location.	Begun.	Finished.	Built by.	Length, (Feet.)	Character.	Amount Expended in 1929.
DORCHESTER.—Continued.						
Burgoyne street, Holmes street, Sidola road and Wilcox street.	July 1, 1929	Aug. 17, 1929	J. Laconzola.....	508.20 1,425.70	15" and 12" pipe, surface drain... 12" pipe, surface drain. 10 catch-basins.	\$7,102 42
Rich street, from Dill street 275 feet southeasterly.	July 5, 1929	Aug. 2, 1929	J. J. Conway.....	282.20	10" pipe, sewer.....	2,136 10
Regis road and Donald street.....	July 15, 1929	Sept. 17, 1929	J. Williams.....	627.86 927.88	8" and 10" pipe, sewer..... 12" pipe, surface drain. 10 catch-basins.	12,527 36
Washington street, between Valley road and Mora street.	July 29, 1929	Nov. 29, 1929	A. Grande Company.....	313.20 380.50 419.20 442.60 1,109.20	10" pipe, sewer..... 12" pipe, surface drain. 15" pipe, surface drain. 20" pipe, surface drain. 24" pipe, surface drain.	24,764 20
Ashton street and Mt. Bowdoin terrace.....	June 3, 1929	July 1, 1929	C. Russo.....	94 1,165.50	10" pipe, sewer..... 12" pipe, surface drain. 13 catch-basins.	6,842 96
Oakland street and Ashland street.....	Aug. 15, 1927	July 26, 1929	A. Baruffaldi.....	102 600.50 107 252	1' 3" by 2' sewer..... 12" and 10" pipe, sewer. 3' 6" concrete conduit. 3' concrete conduit.	45,023 22
Kimball street and Oldfield street.....	Aug. 12, 1929	Sept. 12, 1929	A. Piatella.....	305.27 97.40	10" pipe, sewer..... 12" pipe, sewer.	2,804 96
Supple road, from Normandy street to Blue Hill avenue.	Sept. 16, 1929	Oct. 7, 1929	John Williams.....	440.10	12" pipe, surface drain..... 4 catch-basins.	2,929 95

Hazleton street and Drake street.....	Sept.	16, 1929	Nov.	16, 1929	J. Laconzola.....	191.80 737.70 32 730	15" pipe, surface drain. 12" pipe, sewer. 10" pipe, sewer. 10" pipe, surface drain.	5,841 43
Milton street, from Granfield street to Hall street and Davis street.	Sept.	11, 1929	Nov.	12, 1929	Charles Russo.....	493.90 432.20 1,429.75 133.20	24" pipe, surface drain. 18" pipe, surface drain. 10" and 12" pipe, surface drain. 2" concrete conduit. 20 catch-basins.	18,563 94
Ristor road, from River street.....	Oct.	8, 1929	Oct.	24, 1929	L. Balboni.....	647.85	18", 15" and 12" pipe, sewer. 6 catch-basins.	3,078 38
Truxton street, from Washington street to Milton street.	Sept.	24, 1929	Nov.	2, 1929	D. V. Contracting Company.	1,109.80	12" pipe, surface drain. 6 catch-basins.	5,343 20
Shay street and outlet in passageway.....	Nov.	2, 1929	Dec.	3, 1929	C. Russo Company.....	530.15	12" and 15" pipe, sewer. 4 catch-basins.	4,699 78
Manor street, from Farrow street to 100 feet northwesterly.	Dec.	19, 1929	Dec.	27, 1929	C. Russo Company.....	530.15	15" pipe, sewer. 4 catch-basins.	532 17
HYDE PARK.								
Summer street and Bald Knob road.....	Aug.	13, 1929	Nov.	11, 1929	J. Todesca.....	290.75	10" pipe, sewer.....	2,394 02
Clifford street and Neponset avenue.....	Nov.	21, 1929	Dec.	15, 1929	A. Grande.....	316.50 292.43	12" pipe, sewer. 10" pipe, sewer.	2,396 75
River street, from Osenler street, 100 feet easterly.	Feb.	6, 1929	Feb.	18, 1929	C. Russo.....	184.00	10" pipe, sewer.....	891 00
Baldwin street, from existing sewer, 200 feet northwesterly, etc.	April	24, 1929	Nov.	14, 1929	J. Todesca.....	298.50	10" pipe, sewer.....	1,350 80
Cleary street and Greenwood avenue.....	July	1, 1929	Sept.	12, 1929	J. Todesca.....	200.00 396.72	10" pipe, sewer. 15" pipe, surface drain.	3,270 37
Westminster street, River street and outlet in Glenwood avenue.	Aug.	16, 1929	Oct.	21, 1929	J. Todesca.....	55.50 266.80 554.55 251.45	12" pipe, surface drain. 18" pipe, surface drain. 24" pipe, surface drain. 10" pipe, sewer, 10 catch-basins.	7,857 46

Sewerage Works, Construction, January 1, 1929, to December 31, 1929, Inclusive.—Concluded.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1929.
HYDE PARK.— <i>Continued.</i>						
Rosemont street and land from Ruthridge road, 180 feet.	Oct. 19, 1929	Nov. 2, 1929	A. Piatelli	189 00	10" pipe, sewer.	\$1,050 52
CITY PROPER.						
Causeway street, between Canal street and Nashua street.	Feb. 11, 1929	May 30, 1929	V. Barletta Company	363.19	3' by 5' concrete overflow.	
Nashua street, between Minot street and Leverett street.	June 6, 1929	Nov. 15, 1929	C. & R. Construction Com- pany.	750.38 142.00 18.50 766.20	15" pipe, sewer. 18" pipe, sewer. 24" pipe, overflow. 6 by 7 6" concrete overflow, in- cluding tide gate chamber.	49,418 41
				9.80 111.80	28' by 4' concrete sewer. 3' 9" by 14' concrete sewer and sewer chamber.	
Nashua street, surface drain, opposite Lowell street.	Nov. 19, 1929	Nov. 27, 1929	C. & R. Construction Com- pany.	30 00	8' 4" by 9' temporary wood over- flow.	1,677 37
ROXBURY.						
Kilmarnock street.....	Oct. 4, 1929	Oct. 15, 1929	L. Balboni.....	303.50	12" pipe, sewer.	

East Boston Pumping Station and Outlets.

LOCATION.	Begun.	Finished.	Built by.	Length. (Feet.)	Character.	Amount Expended in 1929.
Porter street outlet, from Boston Harbor to Cottage street.	Jan. 27, 1928	June 3, 1929	C. & R. Construction Com- pany.	4,096.4	12' by 10' concrete conduit..... 23 manholes.	\$166,235 25

Recapitulation.

DISTRICTS.	Linear Feet Sewers.	Linear Feet Catch-basins Drain.	Manholes.	Catch-basins.	Amount Expended in 1929.
South Boston.....	163.40	35.25	4	4	\$17,770 56
East Boston.....	2,445.79	422.42	27	15	11,828 63
Charlestown.....		15	0	1	1,959 76
Brighton.....	20,807.18	1,094	113	69	94,857 91
West Roxbury.....	43,752.26	2,063	342	134	221,472 87
Dorchester.....	31,968.08	2,865	196	191	174,560 35
Hyde Park.....	4,508.80	420	50	28	17,782 41
Roxbury.....	409.90	390	8	26	17,390 27
City Proper.....	3,512.25	405	39	27	79,753 98

**New Catch-basins and Manholes Built by Day Labor and Contract
January 1, 1929, to December 31, 1929, Inclusive.**

DISTRICTS.	Catch-basins.	Manholes.	Total Cost.
South Boston.....	25	4	\$8,204 31
East Boston.....	8	6	3,775 90
Charlestown.....	4	1	346 50
Brighton.....	28	10	8,935 82
West Roxbury.....	34	12	16,661 60
Dorchester.....	39	9	17,131 37
Hyde Park.....	15	2	8,092 42
Roxbury.....	30	12	24,945 78
City Proper.....	42	20	28,047 04
Totals.....	225	76	\$116,140 74

SEWERAGE WORKS LOAN, 1929.

Engineers' salaries, general	\$128,979 48
Amount charged to construction of sewers	45,381 84
	<u>\$174,361 32</u>

ENGINEERING EXPENSE.

Labor	\$8,585 54
Teaming	470 76
Borings	3,309 25
Transportation	5,343 36
Supplies, etc.	78 76
	<u>\$17,787 67</u>

PUMPING STATION CONSTRUCTION.

Contracts	\$3,310 20
	<u>\$3,310 20</u>

SUNDRIES.

Labor	\$1,577 77
Materials	75,068 09
Miscellaneous	2,024 92
	<u>\$78,670 78</u>
Less material charged to jobs	41,090 25
	<u>\$37,580 53</u>

COURT EXECUTIONS AND AWARDS ON ACCOUNT OF LAND-TAKINGS, ETC., 1929.

Charles Struzziery, Neponset avenue, West Roxbury	\$1,500 00
Edith F. Van Hein, Wedgemere road, West Roxbury	750 00
Henry E. Meyer, Metropolitan avenue, Roslindale avenue	250 00
	<u>\$2,500 00</u>

Summary of Sewer Construction for Twelve Months Ended December 31, 1929.

DISTRICTS.	Built by City by Contract or Day Labor.	Built by Private Parties.	Total Length Built.	
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Miles.</i>
City Proper.....	3,116.00	396.25	3,512.25	0.665
Roxbury.....	409.90	.....	409.90	0.078
South Boston.....	163.40	.....	163.40	0.031
East Boston.....	2,445.79	.....	2,445.79	0.463
Charlestown.....	.....	.....	.....	.....
Brighton.....	16,420.96	4,386.22	20,807.18	3.941
West Roxbury.....	42,992.93	759.33	43,752.26	8.286
Dorchester.....	28,025.58	3,942.50	31,968.08	6.055
Hyde Park.....	2,808.20	1,700.60	4,508.80	0.854
Totals.....	96,382.76	11,184.90	107,567.66	20.373

**Net Increase in Length of Sewers Between January 1, 1929, and
December 31, 1929.**

DISTRICTS.	Length of Sewers Built During the Twelve Months ended December 31, 1929.	Length of Sewers Re- built or Abandoned During the Twelve Months ended December 31, 1929.	Net Increase for Twelve Months Ended December 31, 1929.	
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Miles.</i>
City Proper.....	3,512.25	915.00	2,597.25	0.492
Roxbury.....	409.90	.....	409.90	0.078
South Boston.....	163.40	.....	163.40	0.031
East Boston.....	2,445.79	.....	2,445.79	0.463
Charlestown.....	.....	.....	.....	.....
Brighton.....	20,807.18	221.92	20,585.26	3.900
West Roxbury.....	43,752.26	.....	43,752.26	8.286
Dorchester.....	31,968.08	357.00	31,611.08	5.986
Hyde Park.....	4,508.80	12.00	4,496.80	0.851
Totals.....	107,567.66	1,505.92	106,061.74	20.087
<i>Total Length of Sewers.</i>				<i>Miles.</i>
Common sewers and surface drains previous to January 1, 1929.....				1,048.80
Net increase of common sewers and surface drains between January 1, 1929, and December 31, 1929.....				20.09
Total common sewers and surface drains to December 31, 1929.....				1,068.82
Intercepting sewers connecting with Metropolitan sewers to December 31, 1929.....				* 6.81
Boston main drainage intercepting sewers to December 31, 1929.....				* 24.12
Grand total of common and intercepting sewers to December 31, 1929,				1,099.8
Total mileage of streets containing sewerage works to December 31, 1929,				636.43

* No additional lengths during year 1929.

**Summary of Sewer Construction for Five Years Previous to
December 31, 1929.**

	1925.	1926.	1927.	1928.	1929.
	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>	<i>Linear Feet.</i>
Built by city by contract or day labor.....	75,241.99	72,958.49	87,199.14	102,523.60	96,382.76
Built by private parties..	10,296.40	4,009.55	11,699.24	11,279.08	11,184.90
Totals.....	85,538.39	76,968.04	98,898.38	113,802.68	107,567.66

Table of Approximate Quantities, Lifts and Duties at Calf Pasture Pumping Station, from January 1, 1929, to December 31, 1929, Inclusive.

MONTH.	Total Gallons Pumped.	Average per Day Gallons.	Minimum per Day Gallons.	Maximum per Day Gallons.	Average Lift, Feet.	AVERAGE DAILY DUTY IN MILLION FOOT-POUNDS.	
						Per Gallon Oil.	Per Kilowatt Hour.
January.....	3,300,229,848	106,459,027	95,837,002	154,837,897	35.4	6.8	3.0
February.....	3,108,218,544	111,007,805	90,962,537	180,054,272	35.4	7.5	3.1
March.....	3,705,380,124	119,528,391	87,274,739	186,568,156	35.4	7.0	3.1
April.....	3,980,895,143	132,696,504	85,871,274	224,088,062	35.4	7.2	3.1
May.....	3,578,754,035	115,443,679	94,887,268	160,477,363	35.4	7.2	3.1
June.....	3,450,610,250	115,020,342	82,653,245	146,810,215	35.4	7.6	3.2
July.....	3,474,960,822	112,095,510	94,682,218	171,325,430	35.4	7.4	3.2
August.....	3,409,165,417	109,973,080	97,859,390	144,210,900	35.4	7.5	3.1
September.....	3,109,200,936	103,540,031	92,110,233	130,003,679	35.4	7.4	3.1
October.....	2,960,221,345	95,491,011	84,369,186	155,201,125	35.4	7.4	3.0
November.....	2,736,870,732	91,229,024	78,930,369	169,770,533	35.4	7.4	3.0
December.....	3,074,898,425	99,190,272	83,255,071	151,085,056	35.4	7.1	3.2
Total.....	39,889,405,621						
Daily averages.....	109,286,043					7.3	3.1

NOTES.—28,041,922,621 gallons pumped by oil; 1,072,970 gallons of oil used.
 11,847,483,000 gallons pumped by electric power; 1,131,800 k. W. hours.
 Figures are based on plunger displacement and on pump ratings, no allowance for slip.

Catch-basins in Charge of Sewer Division.

DISTRICTS.	CATCH-BASIN DATA FOR TWELVE MONTHS ENDED DECEMBER 31, 1929.			TOTAL FOR WHOLE CITY IN CHARGE OF SEWER DIVISION.	
	Number Built or Rebuilt.	Number Abandoned or Removed.	Net Increase.	Previous Report to January 1, 1929.	Grand Total to January 1, 1930.
City proper	47	20	27	3,491	3,518
Roxbury	38	12	26	3,104	3,130
South Boston	22	18	4	1,341	1,345
East Boston	15		15	967	982
Charlestown	1		1	794	795
Brighton	69		69	1,562	1,631
West Roxbury	142	8	134	2,621	2,755
Dorchester	197	6	191	4,151	4,342
Hyde Park	36	8	28	509	537
Totals	567	72	495	18,540	19,035

Cost of Pumping at Calf Pasture Pumping Station January 1, 1929, to December 31, 1929, Inclusive.

ITEMS.	Cost.	Cost per Million Foot Gallons.
Labor	\$82,587 26	\$0.05849
Fuel oil, 1,072,970 gallons	41,661 22	.02951
Electric power, 1,131,800 K. W. hours	* 31,256 10	.02213
Coal-burning refuse	470 61	.00033
Oils and waste	2,286 11	.00162
Rubber valves and packing	2,797 85	.00198
Miscellaneous supplies and renewals	4,718 56	.00334
Totals	\$165,777 71	\$0.11740
Labor at screens	8,344 16	.00591
Grand totals	\$174,121 87	\$0.12331

* This includes all power for auxiliaries and lighting.

Sludge Deposited and Removed from Deposit Sewers at Calf Pasture Pumping Station, from January 1, 1929, to December 31, 1929, Inclusive.

	North Sewer, <i>Cubic Yards.</i>	South Sewer, <i>Cubic Yards.</i>	Total, <i>Cubic Yards.</i>
Sludge in sewers January 1, 1929.....	1,882	1,017	2,899
Sludge deposited during year 1929.....	1,594	651	2,245
Totals.....	3,476	1,668	5,144
Sludge removed during year 1929.....	2,121	877	2,998
Sludge in sewers on January 1, 1930.....	1,355	791	2,146

Amount of Refuse Removed from Gatehouse at Calf Pasture Pumping Station, January 1, 1929, to December 31, 1929, Inclusive.

MONTH.	Number Cheeses.	Weight Pounds.
January.....	86	20,726
February.....	86	20,726
March.....	84	20,244
April.....	82	19,762
May.....	86	20,726
June.....	77	18,557
July.....	97	23,377
August.....	95	22,895
September.....	102	24,582
October.....	94	22,654
November.....	93	22,413
December.....	87	20,967
Totals.....	1,069	257,629

Cheese average 241 pounds.

APPENDIX F.

REPORT OF THE DIVISION ENGINEER OF THE
WATER DIVISION.

BOSTON, January 2, 1930.

To the Commissioner of Public Works.

The following report of the operation, income and expenditure of the Water Division for the year ending December 31, 1929, is respectfully submitted.

The greater portion of pipe laying during the year, due to building construction and property development, was in the West Roxbury and Dorchester districts, 3.2 miles being laid in West Roxbury, 1 mile laid in Dorchester, .6 mile laid in Brighton and .5 mile in Hyde Park.

The total length of pipe laid for the extension of the water system was 6 miles and the work was executed under fifteen contracts, awarded at various times during the year.

The longest single work was the installation of 5,600 linear feet of 12-inch pipe in Hackensack road in West Roxbury and Brookline, providing a second supply to the Faulkner Hospital, Arboretum Heights and the Moss Hill areas previously dependent on a single pipe through Centre street.

During the year 10,617 linear feet or 2 miles of 4-inch and 6-inch water pipe laid fifty years or more, was relaid with 8-inch and 12-inch pipe, improving the fire protection in the more densely populated sections of the city, thereby furnishing the quantity of water sufficient for the modern type of engines operated by the Boston Fire Department.

Some of the longer lengths were:

CITY PROPER.

Waltham street, between Harrison avenue and Albany street, 447 linear feet of 6-inch relaid with 10-inch pipe.

ROXBURY.

Lamont street, between Linden Park and Vernon streets, 540 linear feet of 4-inch and 6-inch relaid with 8-inch pipe.

Kearsarge avenue, between Warren and Winthrop streets, 632 linear feet of 4-inch and 6-inch relaid with 8-inch pipe.

DORCHESTER.

Marsh street, between Belton and Fraser streets, 363 linear feet of 8-inch relaid with 12-inch pipe.

Mt. Bowdoin terrace, between Eldon street and Mallon road, 898 linear feet 6-inch relaid with 8-inch pipe.

Oakton avenue, between Plain and Adonis streets, 1,234 linear feet 6-inch relaid with 12-inch pipe.

WEST ROXBURY.

Avalon road, off Weld street, 375 linear feet of 6-inch relaid with 8-inch pipe.

Allendale street, between Elwell road and Brookline line, 670 linear feet of 6-inch relaid with 12-inch pipe.

Pinedale road, between Canterbury and Grew streets, 628 linear feet of 6-inch relaid with 8-inch pipe.

HYDE PARK.

Wood avenue, between Thatcher and River streets, 1,252 linear feet of 4-inch and 6-inch relaid with 12-inch pipe.

Metropolitan avenue, off Hyde Park avenue, 400 linear feet of 6-inch relaid with 12-inch pipe.

During the year practically every old style Lowry hydrant in South Boston was abandoned and replaced with modern Post hydrants, thus obviating the salting of the hydrants and also making the hydrants easily accessible. The number of hydrants installed was seventy.

Service pipes to the number of 1,576 and varying in size from $\frac{5}{8}$ -inch to 6-inch were installed; of this number ninety were 4-inch pipes to furnish sprinkler protection. In 1928 services to the number of 2,463 were installed, a decided slackening in the building construction in 1929.

The regular work of the Distribution Branch, consisting of repairing leaks, establishing fire and service

pipes, freeing stoppages in the older service pipes, shutting off and letting on water, etc., was performed in such manner and at such times as to provide a minimum of delay and discomfort to water applicants, water takers and the general public. Practically all of the work in the business district is now done on Sundays to care for the above conditions.

In compliance with the Legislative Acts of 1907, 574 meters were set on old services in existence previous to 1907, and 2,021 meters were set on new service pipes, a total of 2,595 meters set during the year. At the end of the year all live service pipes had been metered and the total number of meters in the system is 98,815. With Boston entirely metered the work of the Meter Branch is increasing and in addition to the installation of meters on new and old services, 8,917 meters were changed and reset, and 2,067 meters were repaired in service.

The collections for all purposes in the Water Division were \$4,625,544.28.

Very respectfully,

C. J. CARVEN,
Division Engineer.

FINANCIAL STATEMENT.

RECEIPTS.

Sales of water	\$4,506,159 24
Fees for summonses	4,507 34
Shutting off and letting on water for nonpayment	16 00
Miscellaneous	114,861 70
Gross income	\$4,625,544 28
Transferred to City Loan account to pay Hyde Park Water Debt	\$16,000 00
Transferred to credit of Collecting Department, Water Division	58,329 70
	<u>74,329 70</u>
Net income	\$4,551,214 58
Balance January 1, 1929	54,370 24
Total income available for Water Service	<u>\$4,605,584 82</u>

EXPENDITURES.

Current expenses and extensions	\$1,585,134 62
Interest on water loans	38,425 00
Payments on serial loans	214,000 00
Refunded water rates	395 53
Metropolitan water assessment	2,459,496 77
Total expenditures 1929. (From revenue)	<u>4,297,451 92</u>
Balance December 31, 1929	<u><u>\$308,132 90</u></u>

APPROPRIATION FOR SERVICE MAINS AND RELAYING MAINS
(FROM REVENUE).

Balance January 1, 1929	\$1,139 78
Expended during 1929	0,000 00
Balance December 31, 1929	<u><u>\$1,139 78</u></u>

APPROPRIATION FOR EXTENSION OF WATER MAINS (FROM LOAN).

Balance January 1, 1929	\$5,880 35
Expended during 1929	3,200 00
Balance December 31, 1929	<u><u>\$2,680 35</u></u>

APPROPRIATION FOR HIGH PRESSURE FIRE SYSTEM EXTENSION.

Balance January 1, 1929	\$382 00
Expended during 1929	000 00
Balance December 31, 1929	<u><u>\$382 00</u></u>

Details of expenditures under appropriation for Water Service for the fiscal year 1929.

EXTENSION.

Construction of new mains	\$151,575 73	
Replacement of old mains	35,305 23	
New hydrants	13,190 28	
	<hr/>	
Total extensions		\$200,071 24

MAINTENANCE.

Office and Engineering Branch:		
Salaries and wages	\$61,235 57	
Traveling expenses	946 77	
Printing, stationery and postage	2,742 79	
Miscellaneous	3,776 93	
	<hr/>	
		\$68,702 06
Income Branch:		
Salaries and wages	\$149,679 50	
Traveling expenses	1,780 80	
Printing, stationery and postage	5,884 12	
Miscellaneous	3,007 09	
	<hr/>	
		160,351 51
Distribution Branch:		
Salaries and wages	\$46,539 70	
Traveling expenses	437 66	
Printing, stationery and postage	1,328 99	
Miscellaneous	1,896 41	
	<hr/>	
		50,202 76
Meter Branch:		
Salaries and wages	\$18,820 88	
Traveling expenses	28 50	
New meters and setting	48,740 67	
Meters, repairing, resetting and testing	51,347 44	
Shops	19,961 15	
Holiday	5,739 25	
Laborers' vacations	770 92	
Printing, stationery and postage	240 69	
Miscellaneous	310 75	
	<hr/>	
		145,960 25
Inspection of castings	8,110 54	
Yards	101,888 35	
Shops	27,688 94	
Damages	8,322 94	
Stables	4,654 41	
Tools and repairs	14,856 60	
Main pipe relocation	14,129 10	
Main pipe repairs	72,911 44	
Service pipe, new	106,225 53	
Service pipe, changes	16,734 82	
Service pipe, repairs	137,403 09	
Hydrant, changes	78,482 69	
Hydrant, repairs	83,063 14	
Water post, changes	477 10	
Water post, repairs	246 51	
Fountains, new	357 29	
Fountains, changes	532 30	
	<hr/>	
Carried forward	\$1,101,301 37	\$200,071 24

<i>Brought forward</i>	\$1,101,301 37	\$200,071 24
Fountains, repairs	3,165 30	
Fountains, account of ice	1,940 76	
Holiday	69,441 46	
Investigations	1,356 35	
Off and on water	12,744 42	
Accommodation work	8,565 51	
Work on account of office and engineer's branch	2,338 39	
Work on account of Income Branch	11 10	
Work on account of Meter Branch	2,660 25	
Work on account of new meters	11,043 40	
Work on account of meter repairs	11,727 85	
Launch, repairs and supplies	549 10	
Harbor service	4,235 76	
Veterans' pensions	4,950 99	
Laborers' pensions	7,904 32	
Laborers' vacations	23,374 62	
Workmen's compensation	1,175 84	
Emergency service	74,653 01	
Municipal garage	248 99	
Medical inspector	600 00	
Light and power	2,043 65	
Veterinary services	125 00	
Expert services	650 00	
Taxes	285 10	
Regulating water fixtures	510 70	
Delivering water	1 00	
Automobiles	58,861 69	
Total maintenance		1,406,465 93
Merchandise sold and stock consigned to junk		3,967 72
Stock purchased		285,976 21
		<u>\$1,896,481 10</u>
Less stock used and disposed of		311,346 48
Total expenditures from appropriation for Water Service		<u><u>\$1,585,134 62</u></u>

Details of expenditures under appropriation for Extension of Water Mains. (From loan.)

Construction of new mains	\$3,200 00	
Stock purchased	300 00	
	<u>\$3,500 00</u>	
Less stock used	300 00	
Total expenditures for the year ending December 31, 1929		<u><u>\$3,200 00</u></u>

APPROPRIATION FOR COLUMBUS AVENUE BRIDGE.

Relaying water mains on account of bridge construction	<u><u>\$2,256 31</u></u>
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APPROPRIATION FOR CONGRESS STREET BRIDGE.

Relaying water mains on account of bridge construction	<u><u>\$77,120 25</u></u>
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APPROPRIATION FOR OAKLAND AND ASHLAND STREETS IMPROVEMENTS.

Relaying water mains on account of street widenings	\$2,655 22
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APPROPRIATION FOR LOWELL, NASHUA AND CAUSEWAY STREETS.

Relaying water mains on account of street widenings	\$1,800 00
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RESERVE FUND.

Expended for ice delivered to drinking fountains	\$6,148 23
--	------------

COST OF CONSTRUCTION AND CONDITION OF WATER DEBT.

Cost of construction to December 31, 1929	\$21,847,175 26
Cost of construction to December 31, 1928	21,643,904 02
	<u>\$203,271 24</u>
Increase during the year 1929	
Outstanding loans December 31, 1928	\$998,000 00
Outstanding loans December 31, 1929	768,000 00
	<u>\$230,000 00</u>
Decrease during the year 1929	
Cost of existing works December 31, 1929:	
Pipe yards and buildings	\$94,832 16
Engineering expenses	57,873 58
Distribution System (additions during	
year, \$203,271.24)	*21,226,469 52
Hyde Park Water Works	468,000 00
	<u>\$21,847,175 26</u>
High Pressure Fire System	<u>\$2,062,155 92</u>

*Includes \$85,121.50 expended for High Pressure Fire System Extension during years 1925 and 1926.

Financial Transactions.

	1927.	1928.	1929.
Revenues:			
Receipts for water.....	\$2,913,117 06	\$4,099,044 58	\$4,506,159 24
All other receipts.....	167,655 59	215,744 96	119,385 04
Balance from previous year.....	27,914 62	57,131 80	54,370 24
Expenditures from revenue:	\$4,108,687 27	\$4,371,921 31	\$4,679,914 52
Current expenses and extensions.....	\$1,483,018 23	\$1,598,068 76	\$1,585,134 62
Metropolitan water assessment.....	2,155,188 41	2,384,682 69	2,459,496 77
Refunded water rates.....	1,052 80	701 28	395 53
Service mains and relaying mains.....	71,595 99	25,129 22	58,329 70
Collecting Department.....	53,356 03	56,543 37	4,065,125 32
	3,764,211 46		
Balance available for interest and debt payment.....	\$344,475 81	\$306,796 02	\$576,557 90
Expenditures on Debt Account:			
Interest on water debt.....	\$52,940 00	\$47,555 00	\$38,425 00
Payment on Hyde Park water debt.....	16,000 00	16,000 00	16,000 00
Payment on serial loans.....	200,000 00	214,000 00	214,000 00
	268,940 00	277,555 00	268,425 00
Balance, year's operations.....	\$75,535 81	\$29,241 02	\$308,132 90

Financial Transactions.—Concluded.

	1927.			1928.			1929.		
Loan Account:									
Debt outstanding first of year.....	\$1,244,000 00	.....	.....	\$1,228,000 00	.....	.....	\$998,000 00	.....	.....
New loans issued during year.....	200,000 00	.....	\$1,444,000 00	.....	\$1,228,000 00	.....	.....	\$998,000 00	.....
Loans paid during year.....	.....	.....	216,000 00	.....	.....	230,000 00	.....	230,000 00	.....
Debt, end of year (all serial bonds).....	.....	.....	\$1,228,000 00	.....	.....	\$998,000 00	.....	\$768,000 00	.....
Construction Account from Loans:									
Balance first of year, extension of water mains.....	\$238,566 12	.....	.....	\$156,041 91	.....	.....	\$5,880 35	.....	.....
Balance first of year, laying and relaying street water mains.....	19,824 84	.....	\$258,390 96	6,580 18	.....	\$162,622 09	.....	\$5,880 35	.....
New loans.....	.....	.....	200,000 00	.....	.....	.....	.....	.....	.....
Total available.....	.....	.....	\$458,390 96	.....	.....	\$162,622 09	.....	\$5,880 35	.....
Expended for construction, extension of water mains.....	\$282,524 21	.....	.....	\$150,161 56	.....	.....	\$3,200 00	.....	.....
Expended for construction, laying and relaying street water mains.....	13,244 66	.....	295,768 87	6,580 18	.....	156,741 74	.....	3,200 00	.....
Balance unexpended, end of year.....	.....	.....	\$162,622 09	.....	.....	\$5,880 35	.....	\$2,680 35	.....

Total New Construction:							
From revenue, extension current expenses.....	\$223,932 12	.....	\$175,665 32	.....	\$200,071 24		
From revenue, service, mains and relaying mains.....	59,864 48	.....	21,361 05	.....		
From loan funds, extension of water mains.....	282,524 21	.....	150,161 56	.....	3,200 00		
From loan funds, laying and relaying street water mains.....	13,244 66	.....	6,580 18	.....			\$203,271 24
		\$579,565 47		\$353,768 11			
Cost of construction, end of year.....	\$21,290,135 91	.....	\$21,643,904 02	.....	\$21,847,175 26		
Cost of construction, first of year.....	20,710,570 44	.....	21,290,135 91	.....	21,643,904 02		
Increase in plant cost during year.....	.....	\$579,565 47	.....	\$353,768 11	.....		\$203,271 24

INCOME BRANCH.

Statement of Each Year's Water Rates, 1912 to 1929, as of
December 31, 1929.

YEAR.	Assessments.	Abatements.	Collections.	Outstanding.
1912.....	\$3,001,771 87	\$58,363 39	\$2,943,402 48	
1913.....	3,004,331 52	50,147 90	2,954,183 62	
1914.....	3,034,885 83	64,653 01	2,970,232 82	
1915.....	2,960,797 45	57,782 09	2,903,015 36	
1916.....	3,130,590 53	67,771 69	3,062,813 84	
1917.....	3,120,878 86	77,353 75	3,043,525 11	
1918.....	3,359,714 95	162,415 52	3,197,299 43	
1919.....	3,210,147 91	95,812 76	3,114,335 15	
1920.....	3,503,677 88	123,509 90	3,380,167 98	
1921.....	3,615,663 51	90,946 23	3,524,717 23	
1922.....	3,612,715 51	90,453 27	3,522,262 24	
1923.....	3,817,369 27	77,449 02	3,739,920 25	
1924.....	3,832,531 26	43,127 87	3,782,009 80	\$7,393 59
1925.....	3,875,434 21	38,934 81	3,827,155 95	9,343 45
1926.....	3,910,119 54	44,162 81	3,855,442 42	10,514 31
1927.....	3,978,598 57	41,160 39	3,895,065 11	42,373 07
1928.....	4,417,935 43	29,452 77	4,222,842 57	165,640 09
1929.....	5,013,339 64	18,094 50	3,308,746 61	1,686,498 53

METER BRANCH.

Table No. 1.—Statement of Work During Year 1929.

MAKE.	New Sets.	Discontinued.	CHANGES.		Tested.	Repaired in Shop.	Resets.	Repaired in Service.
			Out.	In.				
Hersey disc.	359	239	4,361	4,562	9,162	4,141	118	1,204
Worthington disc.	53	67	1,181	1,278	2,526	1,142	31	21
Watch dog.	2,089	182	1,255	2,236	3,673	1,458	66	540
King.	17	91	1,624	675	2,390	166	37	126
Hersey detector.	26	1	2	3	6	.....	.....	34
Hersey rotary.	1	13	58	16	87	.....	.....	11
Crown.	1	6	85	2	93	.....	.....	.....
Federal.	1	7	69	7	83	7	.....	52
American.	22	11	138	83	232	149	8	46
Lambert.	14	2	30	33	65	16	2	11
Nash.	3	13	80	2	95	5	.....	4
Keystone.	5	5	19	16	40	8	1	2
Trident.	3	1	9	2	12	13	.....	9
Empire. ....	.....	.....	5	.....	5	.....	.....	.....
Hersey compound.	1	.....	1	2	3	.....	.....	7
Totals.	2,595	638	8,917	8,917	18,475	7,105	263	2,067

Table No. 2.

Meters in Service December 31, 1929.

MAKE.	DIAMETER IN INCHES.											Totals.
	$\frac{5}{8}$	$\frac{3}{4}$	1	1 $\frac{1}{2}$	2	3	4	6	8	10	12	
Hersey disc.....	42,554	3,076	1,406	722	276	128	74	7	.....	.....	.....	48,243
Worth disc.....	8,976	19	36	39	77	7	1	.....	.....	.....	.....	9,155
Watch dog.....	22,038	910	1,035	711	418	197	62	.....	.....	.....	.....	25,371
King.....	9,046	332	44	46	38	.....	.....	.....	.....	.....	.....	9,506
Hersey detector.....	.....	.....	.....	.....	.....	3	31	45	24	22	3	128
Hersey rotary.....	352	289	163	140	156	53	23	15	.....	.....	.....	1,191
Crown.....	302	394	143	109	131	38	33	5	.....	.....	.....	1,155
Federal.....	1,177	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,177
American.....	931	403	.....	.....	.....	.....	.....	.....	.....	.....	.....	1,334
Lambert.....	251	97	69	8	14	.....	4	.....	.....	.....	.....	443
Nash.....	260	108	64	9	.....	.....	.....	.....	.....	.....	.....	441
Keystone.....	165	161	21	1	2	2	6	1	.....	.....	.....	359
Trident.....	155	5	5	4	.....	14	7	3	2	2	.....	197
Empire.....	93	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	93
Hersey compound.....	.....	.....	.....	.....	.....	1	8	13	.....	.....	.....	22
Totals.....	86,300	5,794	2,986	1,789	1,112	443	249	89	26	24	3	98,815

MAINTENANCE DIVISION.

Table No. 1.

Showing Lengths of Water Pipes and Connections Owned and Operated by the Public Works Department, Water Division (Water Service), and Number of Valves in Same, December 31, 1929.

DIAMETER OF PIPES IN INCHES.																	
	48.	42.	40.	36.	30.	24.	20.	16.	14.	12.	10.	8.	6	4.	3.	2.	Totals.
Length owned and operated																	
December 31, 1928.	20,600	15,980	16,081	43,780	90,543	84,643	86,533	295,522	5,041	1,640,254	446,620	1,021,571	1,115,433	83,048	9,442	6,669	4,981,760
Gate valves in same.	17	4	9	20	56	80	73	680	19	4,389	1,498	3,541	3,557	567	16	17	14,543
Air valves in same.	35	5	9	34	109	79	41	78	1	49	43	1	3	1	1	1	445
Blow-offs in same.	5	4	3	11	33	30	46	70	7	163	43	140	132	59	7	2	748
Length laid and relaid during																	
1929.						264	119	1,791	15,021	1,430	22,654	1,658	1,658	160	1	1	43,097
Gate valves in same.								7	75	19	116	22	25	1	1	1	240
Air valves in same.							1	4	4								9
Blow-offs in same.							1		6	1	18		8	1			35
Length abandoned during																	
1929.						266	70	2,095	1,223	538	4,655	5,606	5,606	1,684		160	16,297
Gate valves in same.								3	3	3	8		25	1	1	1	44
Air valves in same.								1									4
Blow-offs in same.									3	2		9	2				16
Length owned and operated																	
December 31, 1929.	20,600	15,980	16,081	43,780	90,543	84,641	86,582	295,218	5,041	1,654,052	447,512	1,039,570	1,111,485	81,524	9,442	6,509	5,008,560
Gate valves in same.	17	4	9	20	56	80	73	684	19	4,461	1,514	3,649	3,554	567	16	16	14,739
Air valves in same.	35	5	9	34	109	79	42	81		50	1	3	3	1	1	1	450
Blow-offs in same.	5	4	3	11	33	30	47	70		166	42	149	138	60	7	2	767

948.59 miles in system.

Table No. 2.

Total Number of Hydrants in System December 31, 1929.

	Lowry.	Boston Lowry.	Boston Post.	Ordinary Post.	Bachelor and Finneran Post.	Ludlow Post.	Chapman Post.	Coffin Post.	Matthews Post.	Boston.	Totals.
Brighton (public).....	16	33	268	515	189	.....	.....	.....	.....	11	1,032
“ (private).....	.....	.....	.....	8	.....	.....	.....	.....	.....	2	10
Charlestown (public).....	73	23	138	58	53	.....	.....	.....	.....	2	347
“ (private).....	13	1	.....	37	.....	.....	.....	.....	.....	5	56
City proper (public).....	451	35	471	246	262	.....	.....	.....	.....	52	1,517
“ (private).....	5	.....	9	6	2	.....	.....	.....	.....	38	60
Dorchester (public).....	153	111	659	1,117	447	.....	.....	.....	.....	16	2,503
“ (private).....	1	1	9	.....	2	.....	.....	.....	.....	4	17
East Boston (public).....	21	14	195	222	79	.....	.....	.....	.....	5	536
“ (private).....	8	1	.....	9	.....	.....	.....	.....	.....	25	43
Hyde Park (public).....	.....	.....	12	331	137	5	106	1	.....	.....	592
“ (private).....	.....	.....	.....	.....	.....	13	55	.....	4	.....	72
Roxbury (public).....	189	46	392	315	579	.....	.....	.....	.....	13	1,534
“ (private).....	2	1	3	4	.....	.....	.....	.....	.....	10	20
South Boston (public).....	59	17	233	182	153	.....	.....	.....	.....	14	658
“ (private).....	4	1	.....	15	.....	.....	.....	.....	.....	27	47
West Roxbury (public).....	13	140	471	1,026	434	.....	.....	.....	.....	13	2,097
“ (private).....	.....	.....	.....	15	1	.....	.....	.....	.....	1	17
Deer Island (private).....	.....	.....	1	19	.....	.....	.....	.....	.....	.....	20
Gallup's Island (private).....	.....	.....	.....	3	.....	.....	.....	.....	.....	1	4
Long Island (private).....	.....	.....	.....	6	.....	.....	.....	.....	.....	.....	6
Rainsford Island (private).....	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	3
Thompson's Island (private).....	.....	.....	.....	2	.....	.....	.....	.....	.....	.....	2
Quincy.....	.....	.....	.....	9	.....	.....	.....	.....	.....	.....	9
Total number (public)....	975	419	2,839	4,012	2,333	5	106	1	.....	126	10,816
Total number (private and suburban).....	33	5	22	136	5	13	55	.....	4	113	386

Cost of Extension of Main Pipe.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspec- tion.	Total Cost.	Remarks.
Leland street.....	From Wachusett street.....	West Roxbury.	6 {127-6" } 38-8"	6 {38-8" }	\$279 15	\$601 23	\$164 56	\$1,044 94	Private, rock.
Craft place.....	From Wenham street.....	West Roxbury.	6	212	257 96	203 04	25 32	486 32	Private, clay.
Welles park.....	From Welles street.....	West Roxbury.	6	221	239 43	348 02	37 94	625 39	Private, hard pan.
Cornalba terrace.....	From Cornalba street.....	West Roxbury.	6	48	38 97	150 00	21 69	210 66	Private, loam and clay.
Welles terrace.....	From Welles street.....	West Roxbury.	6	187	237 89	194 00	29 12	461 01	Private, clay.
Anawan terrace.....	From Anawan avenue.....	West Roxbury.	6	148	314 86	188 84	14 86	518 56	Private, gravel.
	Totals.....			{943-6" } 38-8"	\$1,368 26	\$1,685 13	\$293 49	\$3,346 88	
Brock street.....	From Oakland street.....	Brighton.	8	509	\$849 52	\$537 16	\$28 98	\$1,415 66	Private, clay.
LaRose place.....	From Monastery road.....	Brighton.	8	136	332 64	140 51	13 33	486 48	Private, gravel and sand.
Montcalm avenue.....	Between Glencoe and Etna streets	Brighton.	8	119	366 73	174 59	39 32	580 64	Private, hard clay.
Chestnut terrace.....	From Chestnut Hill avenue.....	Brighton.	8	603	1,094 83	742 66	52 73	1,890 22	Private, clay.
Lyne road.....	From Union street.....	Brighton.	8	298	576 95	558 43	54 33	1,189 71	Private, hard clay and rock.
Sanderson place.....	From Faneuil street.....	Brighton.	8	210	485 67	345 00	42 07	872 74	Private, ash filled.
Sorrento street.....	At Eaton street.....	Brighton.	8	53	19 13	79 50	7 23	105 86	Private, gravel and sand.
Eaton street.....	Between Sorrento and North Harvard streets.	Brighton.	8	159	378 71	264 00	21 89	664 60	Private, gravel and sand.
	Carried forward.....		8	2,087	\$4,104 18	\$2,841 85	\$259 88	\$7,205 91	

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspec- tion.	Total Cost.	Remarks.
	<i>Brought forward.</i>		8	2,087	\$4,104 18	\$2,841 85	\$259 88	\$7,205 91	
Ryder Hill road.	From Brayton road.	Brighton.	8	208	464 40	219 76	48 72	732 88	Private, clay.
Emery road.	From Cambridge street.	Brighton.	8	125	149 07	139 70	28 92	317 69	Private, clay and gravel.
Ruth street.	From Faneuil street.	Brighton.	8	350	753 77	525 00	22 77	1,301 54	Private, clay and gravel.
Bellamy street.	Between Burton and Matchett streets.	Brighton.	8	302	619 59	628 94	134 06	1,382 59	Public, under construction.
Huntington avenue.	Between Massachusetts avenue and Cumberland street.	City Proper.	8	565	1,664 11	929 21	57 84	2,651 19	Public, asphalt.
Kilmarnock street.	Between Boylston and Van Ness streets.	City Proper.	8	294	630 99	336 52	26 31	993 82	Public, gravel.
Sleeper street.	Between Congress street and Northern avenue.	City Proper.	8	160	861 68	489 00	36 75	1,387 43	Public, granite block and concrete base.
Washington road.	Washington street.	Dorchester.	8	271	721 54	259 75	23 24	1,004 53	Private, gravel.
Tennis road.	From Blue Hill avenue.	Dorchester.	8	186	235 36	418 90	13 63	667 89	Private, rock.
Ashton street.	Between Blue Hill avenue and Balsam street.	Dorchester.	8	200	340 59	252 70	26 61	619 90	Public, clay.
Mt. Bowdoin terrace.	Between Eldon street and Mallon road.	Dorchester.	8	302	558 03	362 40	72 30	992 73	Public, under construction.
Oldfield street.	From Columbia road.	Dorchester.	8	98	111 67	139 50	7 23	258 40	Private, gravel and rock.
Homes avenue.	Between Adams and Juliette streets	Dorchester.	8	214	619 61	376 28	28 92	1,024 81	{ Private, gravel. Public, macadam.
Juliette street.	At Homes avenue	Dorchester.	8	43					

Claymont terrace	From Queen street	Dorchester.	8	60	81 33	113 75	7 23	202 31	Private, clay.
Young road	From Regis road	Dorchester.	6	25	361 22	592 67	77 17	1,031 06	Public, under construction.
Regis road	From Cummins Highway	Dorchester.	8	223					
Chester park	From Regis road	Dorchester.	6	14	604 82	646 12	54 45	1,305 39	Public, under construction.
Regis road	From Blue Hill avenue	Dorchester.	8	273					
Altereko avenue	From Washington street	Dorchester.	8	25	157 47	201 18	.....	358 65	Private, gravel.
Manor street	From Fairview street	Dorchester.	8	135	222 23	236 60	58 91	517 74	Private, gravel.
Alicia road	From Mercier road	Dorchester.	8	10	46 99	9 50	88	57 37	Private, clay.
Mercier road	At Alicia road	Dorchester.	8	159	226 65	164 20	16 42	407 27	Private, clay.
Roslerin street	From Train street	Dorchester.	8	284	394 32	287 04	53 07	734 43	Private, clay.
Pine Ridge road	From Southern Artery	Dorchester.	8	23	107 93	17 85	3 20	128 98	Private, clay.
Druid street	From Southern Artery	Dorchester.	8	33	130 59	28 05	3 20	161 84	Private, clay.
Parkview street	Between Englewood and Riverview streets.	Dorchester.	8	262					
Englewood street	Between Hillside and Parkview streets.	Dorchester.	8	43	1,078 70	838 10	121 29	2,038 09	Private, gravel and rock.
Richview street	Between Hillside and Parkview streets.	Dorchester.	8	21					
Cowper street	Between Byron and Wordsworth streets.	East Boston.	8	43	70 95	378 05	.....	449 00	Private, dirt.
Sunnyside street	South from Church street	Hyde Park.	8	205	547 26	250 81	86 10	884 17	Public, clay and sand.
Chase street	From Cummins Highway	Hyde Park.	8	48	135 80	65 76	.....	201 65	Private, gravel.
Deforest street	At West street	Hyde Park.	8	15	201 00	85 00	16 87	302 87	Private, clay.
James street	From Cummins Highway	Hyde Park.	8	187	398 90	318 15	33 20	750 25	Private, clay and rock.
	<i>Carried forward</i>		{	6 39 8 7,544	\$16,600 84	\$12,152 37	\$1,319 17	\$30,072 38	

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Department Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Remarks.
	<i>Brought forward</i>		8 { 7,544 } 6 { 39 }		\$16,600 84	\$12,152 37	\$1,319 17	\$30,072 38	
Buckingham street.....	Between Readville street and Neponset River Parkway.	Hyde Park.	8	56	132 69	45 93	95 93	228 62	Private, gravel.
Vale street.....	From Linwood street.....	Hyde Park.	8	31	94 82	33 60	1 60	130 02	Private, gravel.
Linwood street.....	Between Child and Vale streets...	Hyde Park.	8	300	633 59	344 32	38 84	1,016 75	Private, gravel.
Metropolitan Circle.....	From Metropolitan avenue.....	Hyde Park.	8	26	106 26	24 70	3 52	134 48	Private, clay.
River street.....	Between Roy street and railroad bridge.	Hyde Park.	8	659					(Public, under construction.
Thorne street.....	At River street.....	Hyde Park.	8	24	1,393 87	874 30	111 36	2,379 53	Private, gravel filled.
Woodland road.....	From River street.....	Hyde Park.	8	230	542 93	266 00	17 28	826 21	Private, gravel filled.
Round Hill street.....	Between Walden and Arklow streets.	Roxbury.	8	241	504 87	322 40	3 80	831 07	Public, macadam.
Arklow street.....	Between Walden and Round Hill streets.	Roxbury.	8	130	284 71	211 79	15 03	511 53	Public, macadam.
Huntington avenue.....	Between Gainsborough street and Opera place.	Roxbury.	8	285	1,259 46	679 80	59 75	1,999 01	Public, asphalt.
Swallow street.....	Between Sparrow street and Cottage avenue.	West Roxbury.	8	305	555 35	925 46	87 95	1,568 76	Private, rock.
Sanborn avenue.....	Between Tileston road and Ponono avenue.	West Roxbury.	8	307	354 15	369 68	26 46	750 29	Private, clay.
Newfield street.....	From Addington road.....	West Roxbury.	8	37	120 36	40 70	1 68	162 74	Private, gravel.
Addington terrace.....	From Addington road.....	West Roxbury.	8	45	122 37	49 50	5 03	176 90	Private, gravel.

Caspar street.....	From Addington road.....	West Roxbury.	8	197	318 00	228 70	5 23	551 93	Private, gravel.
Topin avenue.....	From Charme avenue.....	West Roxbury.	{ 8	17					
Charme avenue.....	From Neponset avenue.....	West Roxbury.	{ 8	130	222 58	147 00	6 69	376 27	Private, gravel.
Avalon road.....	Between Welles street and Addington road.	West Roxbury.	8	175	383 19	252 18	9 89	645 26	Private, clay.
Barlow street.....	Wachusett street.....	West Roxbury.	8	221	534 56	277 35	52 23	864 14	Private, rock.
West Saville street.....	From La Grange street.....	West Roxbury.	8	124	191 75	243 78	39 54	475 07	Private, clay.
Spinney street.....	Between Sparrow and Cowin streets.	West Roxbury.	8	205	435 25	497 58	26 56	959 39	Private, rock.
Thurflow street.....	From La Grange street.....	West Roxbury.	8	158	177 09	159 00	12 86	348 95	Private, filled.
Rustic road.....	Between Emmons road and Bellevue street.	West Roxbury.	8	231	258 40	298 85	38 63	595 88	Public, clay.
Parley avenue.....	From Centre street.....	West Roxbury.	8	255	525 17	271 08	35 00	831 25	Private, rock and filled.
Dent street.....	Between Wolfe and Burard streets.	West Roxbury.	8	226					
Wolfe street.....	At Dent street.....	West Roxbury.	8	13	494 23	267 78	16 49	778 50	Private, clay and loam.
Burard street.....	At Dent street.....	West Roxbury.	8	18					
Leland street.....	From Wachusett street.....	West Roxbury.	8	168	218 64	721 16	159 36	1,099 16	Private, rock.
Malcolm road.....	From Green Hill avenue.....	West Roxbury.	8	197	471 42	373 91	28 94	874 27	Private, clay.
Perham street.....	At Glenham street.....	West Roxbury.	8	34	504 60	264 84	20 83	790 27	Private, clay and sand.
Glenham street.....	Between Perham and Dent streets.	West Roxbury.	8	226					
Cushing street.....	From Baker street.....	West Roxbury.	8	262	382 97	271 70	11 55	666 22	Private, gravel and sand.
Bobolink street.....	From La Grange street.....	West Roxbury.	8	36	44 36	125 00	14 56	183 92	Private, ash filled.
Lindall street.....	Between Cummins Highway and Basile street.	West Roxbury.	8	313	686 85	218 78	34 75	940 38	Private, sand.
	Carried forward.....		{ 6	39					
			{ 8	13,426	\$28,555 33	\$21,009 24	\$2,204 58	\$51,769 15	

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Department Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Remarks.
	<i>Brought forward.</i>		{ 6 39 8 13,426 }		\$28,555 33	\$21,009 24	\$2,204 58	\$51,769 15	
Whiting street.	At Gardner street.	West Roxbury.	8	33	122 08	64 68	5 67	192 43	Private, sand.
Gardner place.	At Gardner street.	West Roxbury.	8	29	117 83	56 84	4 59	179 26	Private, sand.
Varrick road.	Between Temple and Baker streets.	West Roxbury.	8	135	206 15	210 00	13 68	429 83	Private, clay.
Rand street.	At Gardner street.	West Roxbury.	8	38	128 53	74 48	4 59	207 60	Private, sand.
Safford street.	At Wood avenue.	West Roxbury.	8	21	103 99	25 50	6 59	136 08	Private, gravel and macadam.
Basile street.	Between Lindall and Washington streets.	West Roxbury.	8	528	1,058 29	542 50	70 15	1,670 94	Private, rock and sand.
Summit road.	At Cottage avenue.	West Roxbury.	8	6	15 58	100 00	10 85	126 43	Private, clay.
Simbroco street.	At Gardner street.	West Roxbury.	8	32	121 59	70 00	10 95	202 54	Private, sand.
Summer street.	Between Autumn and Centre streets.	West Roxbury.	8	31	88 13	185 00	14 66	287 79	Private, clay.
Crehore road.	From Hacksack street.	West Roxbury.	8	27	115 09	28 00	3 52	146 61	Private, clay and rock.
Leland road.	From Hacksack street.	West Roxbury.	8	27	114 50	29 00	3 52	147 02	Private, clay and rock.
Herbert road.	From Eldridge road.	West Roxbury.	8	154	313 25	184 35	33 15	530 75	Private, gravel.
Montvale street.	From Iona street.	West Roxbury.	8	76	124 58	147 25	10 88	282 71	Public, loam and clay.
Charne avenue.	From Neponset avenue.	West Roxbury.	8	165	353 91	197 35	28 76	580 02	Private, gravel.
Byrd avenue.	From Neponset avenue.	West Roxbury.	8	219	353 82	255 43	24 86	634 11	Private, gravel.
Clarendon park.	Between Poplar street and Clarendon avenue.	West Roxbury.	8	281	544 01	306 20	25 61	875 82	Private, clay.
Pender street.	From Dent street.	West Roxbury.	8	18	78 77	18 90	.....	97 67	Private, clay.

Perham street.....	Between Lasell street and Temple terrace.	West Roxbury.	8	222	306 89	252 20	57 84	616 93	Private, clay.
Winslow street.....	At Dent street.....	West Roxbury.	8	53	177 04	55 65	.....	232 69	Private, clay.
Dent street.....	Between La Grange and Vermont streets.	West Roxbury.	8	564	1,132 43	719 64	65 00	1,917 07	Public and private, filled.
Eastwood circuit.....	From Prospect street.....	West Roxbury.	8	257	415 92	319 48	39 92	775 32	Private, gravel and sand.
Rowe place.....	From Canterbury street.....	West Roxbury.	8	183	409 92	216 47	25 51	651 90	Private, gravel.
Billings street.....	From Oakmere street.....	West Roxbury.	8	236	455 71	271 60	17 20	744 51	Private, gravel.
Chereton road.....	From Edgenere road.....	West Roxbury.	8	147	362 65	255 58	30 93	649 16	Private, filled.
Cottage road.....	From Stimson road.....	West Roxbury.	8	96	119 78	149 30	14 46	283 54	Private, clay.
Dent street.....	At Glenham street.....	West Roxbury.	8	12	34 85	11 40	88	47 13	Private, clay.
Glenham street.....	Between Dent and Atlanta streets..	West Roxbury.	8	271	391 31	273 60	19 93	684 84	Private, clay.
Burard street.....	Between Dent and La Grange streets.	West Roxbury.	8	231	545 98	237 15	16 52	799 65	Private, clay.
Petrol road.....	From Washington street.....	West Roxbury.	8	165	316 16	239 40	61 28	616 84	Private, rock.
White Oak road.....	From Wren street.....	West Roxbury.	8	37	96 71	46 25	3 52	146 48	Private, gravel and clay.
Sycamore street.....	From Poplar street.....	West Roxbury.	8	32	109 01	225 00	28 92	362 93	Private, clay and macadam.
Burard street.....	Between La Grange and Dent streets.	West Roxbury.	8	253	276 57	310 00	21 69	608 26	Private, filled land.
	Totals.....		6 { 8	39 18,005	\$37,666 36	\$27,087 44	\$2,880 21	\$67,634 01	
Fairview street.....	Between Adams and Train streets..	Dorchester.	10	126	\$439 67	\$193 90	\$28 92	\$662 49	Private, clay.
Wilmington street.....	From Southern Artery.....	Dorchester.	10	119	404 08	187 46	16 08	607 62	Private, clay and rock.
Albemarle street.....	Readville street and Neponset River Parkway.	Hyde Park.	10	53	171 64	73 47	.....	245 11	
Elven road.....	From Waslin street.....	West Roxbury.	10	60	131 04	101 00	20 73	252 77	Public, sand.
	Carried forward.....		10	358	\$1,146 43	\$555 83	\$65 73	\$1,767 99	

Cost of Extension of Main Pipe.—Continued.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Depart- ment Materials, Etc.	Cost of Labor.	Cost of Inspec- tion.	Total Cost.	Remarks.
	<i>Brought forward.</i>								
Manthorne road.....	From Dunbar street.....	West Roxbury.	10	358	\$1,146 43	\$555 83	\$65 73	\$1,767 99	Public, clay.
Wren street.....	Between Gertrude and Woodward roads.	West Roxbury.	10	190	678 92	506 18	24 39	1,209 49	
			10	174	450 66	275 53	18 28	744 47	Private, gravel and clay.
	Totals.....		10	722	\$2,276 01	\$1,337 54	\$108 40	\$3,721 95	
Corey road.....	Cross Washington street.....	Brighton.	{ 8 12	{ 11 51	\$292 27	\$213 00	\$25 96	\$531 23	Public, clay and macadam.
Nonantum street.....	At Newton line.....	Brighton.	12	17	251 87	107 00	10 85	369 72	Public, clay and macadam.
Lake Shore road.....	From Lake street.....	Brighton.	12	243	509 46	343 00	12 70	865 16	Private, ash filled.
Milk street.....	At Atlantic avenue.....	City Proper.	12	21	283 73	171 48	.....	455 21	Public, granite block and concrete base.
Merrimac street.....	Between Pitts and Lancaster streets.	City Proper.	12	194	1,306 49	330 30	72 50	1,709 29	Public, granite block and concrete base.
Milk street.....	Between Atlantic avenue and Sears street.	City Proper.	12	195	1,121 82	352 40	52 92	1,527 14	Public, granite block and concrete base.
Sears street.....	From Milk street.....	City Proper.	{ 8 12	{ 19 3	63 97	35 20	8 19	107 36	Public, granite block and concrete base.
Nashua street.....	Between Minot and Leverett streets.	City Proper.	12	1,008	3,156 54	1,798 60	81 49	5,036 63	Public, under construction.
Southern Artery.....	From Adams street.....	Dorchester.	12	180	340 70	180 00	17 85	538 55	Public, gravel.
Belton street.....	Between Marsh and Milton streets	Dorchester.	{ 8 12	{ 4 573	1,460 56	588 60	31 69	2,080 85	Private, gravel.

Baldwin street.....	From River street.....	Hyde Park.	12	290	755 65	826 58	103 65	1,685 88	Private, clay and rock.
Wood avenue.....	Between Thatcher and River streets.	Hyde Park.	12	358	851 05	473 20	19 77	1,344 02	Public, gravel and macadam.
Westminster street.....	At Wood avenue.....	Hyde Park.	12	27	184 74	38 40	6 59	229 73	Public, gravel and macadam.
West street.....	At Austin street.....	Hyde Park.	12	72	251 36	450 00	36 45	737 81	Public, clay.
Thatcher street.....	From Wood avenue.....	Hyde Park.	12	96	383 93	414 48	17 47	815 88	Private, hard pan and ledge.
Metropolitan avenue.....	Between Highland street and Summit avenue.	Hyde Park.	12	568	1,662 86	612 00	70 84	2,345 70	Public, clay.
Tileston street.....	From River street.....	Roxbury.	12	104	783 86	233 00	38 36	1,055 22	Public, gravel filled.
Holworthy street.....	Between Harold street and Hubbardt avenue.	West Roxbury.	12	261	617 72	1,204 50	122 15	1,944 37	Public, rock.
Oakmere street.....	From Prospect street.....	West Roxbury.	12	240	662 90	276 82	25 32	965 04	Private, gravel.
Baker street.....	Between Brook Farm road and Newton line.	West Roxbury.	12	600	1,395 50	1,602 70	110 43	3,108 63	Public, clay and rock.
Cheswick road.....	Between Pomona avenue and Baker street.	West Roxbury.	12	266	804 49	309 40	19 08	1,132 97	Private, clay.
Cottage avenue.....	At Swallow street.....	West Roxbury.	12	51	171 08	248 46	7 01	426 55	Private, clay.
Addington road.....	From Vermont street.....	West Roxbury.	12	462	1,255 97	574 46	56 22	1,886 65	Private, gravel.
Cheswick road.....	Between Tileston road and Pomona avenue.	West Roxbury.	12	101	336 98	220 14	21 13	578 25	Private, clay and rock.
Hackensack road.....	Between West Roxbury Parkway and Allendale street.	West Roxbury.	12	2 495	5,893 24	4,470 34	149 79	10,513 37	Private, clay and hard pan.
Allendale street.....	Between Hackensack road and Elwell road.	West Roxbury.	8 12	11 1,326	3,003 58	2,961 01	64 39	6,028 98	Public, clay, rock and macadam.
Arboretum road.....	At Malcolm road.....	West Roxbury.	12	6	50 48	11 00	1 76	63 24	Private, clay.
<i>Carried forward.....</i>			8 12	45 9,868	\$27,852 80	\$19,046 07	\$1,184 56	\$48,083 43	

Cost of Extension of Main Pipe.—Concluded.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Depart- ment Materials, Etc.	Cost of Labor.	Cost of Inspec- tion.	Total Cost.	Remarks.
	<i>Brought forward</i>.....	.....	{ 8 12	⁴⁵ 9,868	{ \$27,852 80 1,021 51	\$19,046 07	\$1,184 56	\$48,083 43	
Right of way.....	Between Allendale street and Mal- colm road.	West Roxbury.	12	381		699 38	39 87	1,760 76	
Oakmere street.....	From Prospect street.....	West Roxbury.	12	233	457 76	288 75	33 51	780 02	Private, gravel and sand.
Stinson street.....	Between Riverview and Bogul street.	West Roxbury.	12	189	363 21	341 38	46 83	751 42	Private, gravel and ledge.
Malcolm road.....	Between Arborview road and right of way.	West Roxbury.	8 12	271 301	1,414 53	614 58	96 15	2,125 26	Private, clay.
	Totals.....	.....	{ 12 8	^{10,972} 316	{ \$31,109 81 \$4,621 75	\$20,990 16	\$1,400 92	\$53,500 89	
Southern Artery.....	Between Morton and Oakridge streets.	Dorchester.	16	1,095		\$2,467 44	\$175 93	\$7,365 12	Public highway, clay and rock.

Cost of Replacement of Main Pipe.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Original Size (Inch.)	Remarks.
Noble court.....	Off Summer street.....	East Boston.	4	160	\$455 26	\$522 56	.....	\$977 82	2	Private, grouted brick.
Willow street.....	At Chestnut street.....	City Proper.	6	5	27 95	8 00	3 20	39 15	6	Public, bitulithic.
Whittier place.....	From Downes street.....	Roxbury.	6	61	112 15	104 03	12 78	228 96	4	Private, macadam.
Linden avenue.....	Between Vernon and Linden Park streets.	Roxbury.	6	338	518 21	590 53	38 39	1,147 13	4	Public, macadam.
	Totals.....	.....	6	404	\$658 31	\$702 56	\$54 37	\$1,415 24		
Chestnut street.....	Between Cedar and Willow streets..	City Proper.	8	253	368 68	399 15	31 16	798 99	6	Public, macadam.
Lowell street.....	Between Nashua and Minot streets,	City Proper.	8	134	255 88	136 00	12 70	404 58	6	Public, under construction.
Bearse avenue.....	Between Crest avenue and Butler street.	Dorchester.	8	256	598 11	582 29	46 77	1,227 17	8	Private, clay.
Frazer street.....	From Wood avenue.....	Hyde Park.	8	27	262 79	92 93	4 99	360 71	6	Private, gravel and macadam.
Waterloo street.....	From Neponset River Parkway....	Hyde Park.	8	43	105 47	87 35	.....	192 82	6	Public, macadam.
Arklow street.....	Between Walden and Round Hill streets.	Roxbury.	8	85	152 03	78 78	2 88	233 69	6	Public, macadam.
Chesterton street.....	At Massachusetts avenue.....	Roxbury.	8	4	24 58	250 00	25 08	299 66	8	Public, granite block, concrete base.
Kearsarge avenue.....	Between Warren and Winthrop streets.	Roxbury.	8	629	1,194 22	1,091 41	78 61	2,364 24	6	Public, macadam.
	Carried forward.....	.....	8	1,431	\$2,961 76	\$2,717 91	\$202 19	\$5,881 86		

Cost of Replacement of Main Pipe. — Concluded.

STREET.	Location.	District.	Size. (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Original Size. (Inch.)	Remarks.
Lamont street.....	Brought forward.....	.....	8	1,431	\$2,961 76	\$2,717 91	\$202 19	\$5,881 86	.....
Avalon road.....	Between Vernon and Linden Park streets.	Roxbury.	8	527	903 54	1,022 28	129 02	2,054 84	4	Public, macadam.
Pinedale road.....	Between Welles street and Alding- ton road.	West Roxbury.	8	366	509 46	450 02	17 78	977 26	6	Private, clay.
Baker street.....	Between Canterbury street and Crew avenue.	West Roxbury.	8	662	938 59	899 63	39 14	1,877 36	6	Public, gravelly clay.
Clarendon park.....	At Gardner street.....	West Roxbury.	8	40	391 02	149 00	28 73	568 75	6	Public, sand.
Nashua street.....	At No. 15.....	West Roxbury.	8	15	70 55	76 00	4 99	151 54	8	Private, clay.
Powdoin street.....	Totals.....	.....	8	3,041	\$5,774 92	\$5,314 84	\$421 85	\$11,511 61		
Waltham street.....	Between Minot and Leverett streets.	City Proper.	10	37	126 69	37 00	7 23	170 92	10	Public, under construction.
Oakton avenue.....	Between Cambridge and Allston streets.	City Proper.	10	446	1,248 31	875 98	100 06	2,224 35	6	Public, asphalt.
Metropolitan avenue.....	Totals.....	.....	10	483	\$1,375 00	\$912 98	\$107 29	\$2,395 27		
Allendale street.....	Between Harrison avenue and Union Park street.	City Proper.	12	161	354 12	287 63	44 74	686 49	6	Public, macadam.
Cummins Highway.....	Between Adams and Plain streets....	Dorchester.	12	1,196	3,598 63	1,716 55	177 20	5,492 38	6	Public, under construction.
	From Hyde Park avenue.....	Hyde Park.	12	390	969 29	577 16	55 67	1,602 12	6	Public, gravel.
	Between Hackensack road and Right of Way.	West Roxbury.	12	665	1,288 12	1,058 67	77 92	2,424 71	8	Private, clay and rock.
	Totals.....	.....	12	2,412	\$6,210 16	\$3,640 01	\$355 53	\$10,205 70		
	Over Railroad Bridge.....	West Roxbury.	16	171	710 59	713 33	77 61	1,501 53	12	Public highway.

Cost of Relocation of Main Pipe.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Original Size (Inch.)	Remarks.
Smith street.....	At Western avenue.....	Brighton.	6	20	\$32 26	\$100 00	\$7 23	\$139 49	6	Private, filled.
Downing street.....	Between Whittier and Vernon streets.	Roxbury.	6	244	1,005 25	492 72	33 95	1,531 92	4	Public, brick.
	Totals.....	.....	6	264	\$1,037 51	\$592 72	\$41 18	\$1,671 41		
Brookley road.....	Between Washington and Stead- man streets.	West Roxbury.	8	287	539 34	642 02	43 78	1,225 14	8	Public, gravelly sand.
Brock street.....	From Oakland street.....	Brighton.	8	101	.....	59 40	55 73	115 13	8	Private, clay.
Butler street.....	East side of Railroad, Dorchester Tunnel.	Dorchester.	8	34	.....	42 00	11 30	53 30	8	Private, clay.
Mt. Bowdoin terrace....	Between Elden and Mallen streets.	Dorchester.	8	568	586 77	979 70	97 59	1,664 06	6	Public, under construction.
Regis road.....	Between Young's road and Rock- way street.	Dorchester.	8	147	315 02	244 64	13 58	573 24	8	Public, under construction.
Ormond street.....	Between Duke and Hillsboro streets.	Dorchester.	8 12	46 36	46 20	400 00	48 77	494 97	8 12	Private, clay.
	Totals.....	.....	{ 8 12 36	1,183 36	\$1,487 33	\$2,367 76	\$270 75	\$4,125 84		
Crest avenue.....	Between Branch street and Birch avenue.	Dorchester.	10	219	\$360 11	\$367 00	\$29 76	\$1,056 87	10	Private, clay.
North Harvard street....	At Western avenue.....	Brighton.	12	13	\$62 68	\$100 00	\$6 59	\$169 27	12	Public, gravel.
	Carried forward.....	.....	12	13	\$62 68	\$100 00	\$6 59	\$169 27	12	

Cost of Relocation of Main Pipe.—Concluded.

STREET.	Location.	District.	Size (Inch.)	Feet.	Cost of Depart- ment Materials, etc.	Cost of Labor.	Cost of Inspection.	Total Cost.	Original Size. (Inch.)	Remarks.
	<i>Brought forward</i>		12	13	\$62 68	\$100 00	\$6 59	\$169 27	12	
North Harvard street....	At Western avenue.....	Brighton.	12	28	150 46	150 00	14 26	314 72	8	Public, gravel.
Marsh street.....	Between Grayson and Frazer streets.	Dorchester.	8	21	800 23	396 37	88 49	1,285 09	8	Private, gravel.
Grayson street.....	At Marsh street.....	Dorchester.	12	292						
Wood avenue.....	Between Thatcher and River streets.	Hyde Park.	8	8	4,131 19	2,645 45	118 03	6,894 67	4	Public, gravel and macadam.
Tina avenue.....	At Wood avenue.....	Hyde Park.	12	1,191						
Baker street.....	Near Brook Farm road over brook,	West Roxbury.	8	16	110 81	250 00	36 35	397 16	6	Public, gravel and macadam.
Corey street.....	Between Dwinell street and Brook Farm road.	West Roxbury.	12	43						
			12	22	114 18	200 00	14 06	328 24	12	Public, clay.
	Totals.....		8	45	\$5,369 55	\$3,741 82	\$277 78	\$9,389 15		
			12	1,589						
Charles River Reservation	338 feet south of Western avenue,	Brighton.	16	47	146 82	332 70	27 31	506 83	16	State road.
Charles River Reservation	At Western avenue.....	Brighton.	16	43	244 68	259 00	22 61	526 29	16	State road.
Charles River Reservation	105 feet north of Cambridge street,	Brighton.	16	14	166 53	321 96	27 31	515 80	16	State road.
Cummins Highway.....	Between Sutton and Chase streets,	Hyde Park.	16	23	83 32	138 57	.....	221 89	8	Public highway.
River street.....	Between Agnes avenue and Rail- road Bridge.	Hyde Park.	16	260	1,056 69	659 09	43 66	1,759 44	16	Public, under construction.
	Totals.....		16	387	\$1,698 04	\$1,711 32	\$120 89	\$3,530 25		
Congress street.....	Under bridge.....	City Proper.	16	141	1,790 08	668 52	1,090 54	3,549 14	16	Account of Bridge Con- struction.
Congress street.....	Under bridge.....	City Proper.	20	119					20	
Congress street.....	Under bridge.....	City Proper.	24	264					24	

WATERWORKS STATISTICS.—CITY OF BOSTON.

FOR THE FISCAL YEAR ENDING DECEMBER 31, 1929.

DISTRIBUTION.

Mains.

Kind of pipe: Cast iron, wrought iron.

Size: 2-inch to 48-inch.

Extended, miles, 5.08.

Size enlarged, miles, 1.54.

Total miles now in use, 948.59.

Public hydrants added, 99.

Public hydrants now in use, 10,816.

Stop gates added, 197.

Stop gates now in use, 14,707.

Stop gates smaller than 4-inch, 32.

Number of blow-offs, 767.

Range of pressure on mains, 30 to 90 pounds.

*Service.*Kind of pipe and size: Lead and lead lined, $\frac{1}{2}$ -inch to 2-inch; cast iron, 2-inch to 16-inch; wrought iron and cement lined, $\frac{3}{4}$ -inch to 2-inch; brass and copper, $\frac{5}{8}$ -inch to 2 $\frac{1}{2}$ -inch.

Extended feet, 38,759.

Service taps added, 1,576.

Total service taps now in use as per metered services, 98,890.

APPENDIX G.

REPORT OF THE BOSTON AND CAMBRIDGE
BRIDGE COMMISSION.

BOSTON, January 1, 1930.

To the Honorable the Mayor:

SIR,—As Commissioner for the City of Boston, I respectfully submit herewith the annual report of the Boston and Cambridge Bridge Commission for the year ending December 31, 1929.

The commission is composed of two members, one appointed by the Mayor of the City of Boston and the other by the mayor of the city of Cambridge, under provisions of chapter 467, Acts of 1898.

The commission has charge of the maintenance of the following-named bridges between Boston and Cambridge, Anderson, Cottage Farm, Longfellow, Prison Point, River Street and Western Avenue to Cambridge.

As there is no separate appropriation made for the City of Boston's portion of the expenses of this commission, the same is taken from the appropriation for the Bridge and Ferry Division, Bridge Service. The amount expended during the fiscal year ending December 31, 1929, was \$14,893.33.

ANDERSON BRIDGE (OVER CHARLES RIVER, BETWEEN
BOSTON AND CAMBRIDGE).

Under contract with Walsh & Co. for repaving the surface of this bridge, which work was completed November 17, 1928, payments were made this year amounting altogether to \$2,781.50. Advertising amounted to \$17.53, which was paid last year. The total cost of the work amounted to \$2,799.03.

COTTAGE FARM BRIDGE.

Special Assessment on Account of Construction of Brookline Street, Essex Street, Cottage Farm Bridge.

IN ACCORDANCE WITH CHAPTER 497, ACTS OF 1921.

CITIES AND TOWNS.	Per cent.	Assessment.
Arlington.....	1.15	\$18,869 23
Belmont.....	.73	11,977 86
Boston.....	35.00	574,280 98
Brookline.....	18.00	295,344 51
Cambridge.....	22.00	360,976 62
Chelsea.....	1.40	22,971 24
Dedham.....	.52	8,532 17
Everett.....	1.48	24,283 88
Lexington.....	.37	6,070 97
Malden.....	1.45	23,791 64
Medford.....	1.51	24,776 12
Melrose.....	.73	11,977 86
Milton.....	.78	12,798 26
Needham.....	.43	7,055 45
Newton.....	3.14	51,521 21
Quincy.....	2.74	44,958 00
Revere.....	.74	12,141 94
Saugus.....	.27	4,430 17
Somerville.....	2.50	41,020 07
Stoneham.....	.27	4,430 17
Waltham.....	1.20	19,689 63
Watertown.....	1.14	18,705 15
Wellesley.....	.68	11,157 46
Weston.....	.18	2,953 45
Winchester.....	.63	10,337 06
Winthrop.....	.52	8,532 17
Woburn.....	.44	7,219 53
Totals.....	100.00	\$1,640,802 80

NOTE.—Chapter 416 of the Acts of 1924 provided for the payment by the Boston & Albany Railroad of \$125,000 toward the cost of construction of this bridge.

LONGFELLOW BRIDGE.

On the Longfellow Bridge the street lighting is giving considerable trouble as the lamp posts are being continually knocked down by autos and the wiring is in deplorable shape owing to corroded condition of the conduits. A contract should be let as soon as possible for alteration of this wiring, preferably changing the location of the street lights.

PRISON POINT BRIDGE.

A contract for repairing the steel work and rebuilding the floor of the draw span of this bridge was approved September 12, 1929, between the commission and the New England Construction and Maintenance Company. The draw span of this bridge is now fixed in place. It is paved with $3\frac{1}{2}$ -inch granite paving block laid with asphaltic joints. The work is being done under the supervision of the Bridge and Ferry Division, Public Works Department. It is expected that the work will be completed early in 1930. The amount expended under this contract to date is \$4,080.85.

RIVER STREET BRIDGE.

Apportionment of the cost of construction of this bridge was made in accordance with chapter 497 of the Acts of 1921; chapter 327 of the Acts of 1926 and chapter 320 of the Acts of 1927. The percentages paid are as follows:

City of Boston	37.838 per cent
City of Cambridge	37.838 per cent
County of Middlesex	8.108 per cent
Metropolitan Parks District	16.216 per cent
	<hr/>
	<u>100.00</u> per cent

WESTERN AVENUE BRIDGE (TO CAMBRIDGE).

Apportionment of the cost of construction of this bridge was made in accordance with chapter 497 of the Acts of 1921. The percentages paid are as follows:

City of Boston	35.00 per cent
City of Cambridge	35.00 per cent
County of Middlesex	7.50 per cent

Boston Elevated Railway Company . . .	7.50 per cent
Metropolitan District Commission . . .	15.00 per cent
	<hr/>
	100.00 per cent

BRIDGES, REPAIRS, ETC.

ANDERSON BRIDGE (OVER CHARLES RIVER).

A contract was awarded to Walsh & Co., approved October 19, 1928, for repairing roadway of Anderson Bridge, over the Charles river. The following amount was expended under this contract during 1929:

Walsh & Co.	<u>\$2,781 50</u>
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PRISON POINT BRIDGE.

A contract was awarded to the New England Construction and Maintenance Company, approved September 12, 1929, for repairing the steel work and rebuilding the floor of the draw span of this bridge. The following amounts were expended under this contract during 1929:

New England Construction and Maintenance Company . . .	\$3,620 14
Inspection	396 99
Inspection of material . . .	58 72
Advertising	5 00
	<hr/>
	<u>\$4,080 85</u>

Respectfully submitted,

JAMES H. SULLIVAN,
Commissioner for the City of Boston.

Boston and Cambridge Bridges, Expenditures for the Year Ending December 31, 1929.

Being the Portion Paid by the City of Boston, Which is One Half of the Total Expenditure.

	Administration.	Anderson Bridge.	Cottage Farm Bridge.	Longfellow Bridge.	Prison Point Bridge.	River Street Bridge.	Western Avenue Bridge.	Totals.
Salaries.....	\$279 17	\$850 00	\$130 00	\$3,167 17	\$1,640 00	\$70 00	\$60 00	\$6,196 34
Inspection.....		74 00	44 00	132 00	212 00	70 00	76 00	608 00
Repairs.....			35 00	43	3,730 43			3,765 86
Lumber.....					360 53			360 53
Light.....		300 56	1,254 92	1,614 70	2 21	255 00	274 72	3,702 11
Fuel.....					19 11			19 11
Supplies.....			32 07	38 78	32 95	22 75		126 55
Printing and stationery....	31 64							31 64
Telephone and traveling expenses.....	80 19							80 19
Teaming.....			3 00					3 00
Totals.....	\$391 00	\$1,224 56	\$1,498 99	\$4,953 08	\$5,997 23	\$417 75	\$410 72	\$14,893 33

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